DOCUMENT RESUME

ED 030 613 SP 002 835

By-Aten, Donald G.

A Modified Teacher Preparation Program at the University of Hawaii. Project A.

Hawaii Univ., Honolulu. Educational Research and Development Center.

Spons Agency-Ford Foundation, New York, N.Y.

Pub Date Oct 67

Note-217p.

Available from-Education Research and Development Center, University of Hawaii, 1776 University Avenue, Honolulu, Hawaii 96822 (Summary available free)

EDRS Price MF-$1.00 HC-$10.95

Descriptors-*Experimental Programs, *Preservice Education, *Teacher Education Curriculum

Identifiers-Classroom Observation Record, COR, Teacher Characteristics Schedule, Teacher Evaluation Record, University of Hawaii

This document describes the experimental teacher education curriculum developed by the University of Hawaii and reports an investigation of its effectiveness: a comparison between the achievement of 165 students who entered the experimental program in 1961 and that of 165 who entered the regular program the same year. Chapter 1 describes the experimental curriculum which includes a three-year liberal arts background, a sequence of education courses, one semester of part-time student teaching, and a one-semester full-time internship. Chapter 2 points up differences in the two 5-year undergraduate programs and analyzes student achievement in terms of course work completed and grade point averages of the 189 students who completed a program. Chapter 3 analyzes cooperating teacher ratings of the student teaching performances of the two groups; chapter 4 compares their scores on all sections of the National Teacher Examinations; and chapter 5 compares supervisor ratings of internship performances. Chapter 6 analyzes classroom observations of the 81 subjects (half from each program) teaching in Hawaii schools in 1967, and chapter 7 analyzes the attitudes, educational viewpoints, verbal understanding, and adjustment of the same teachers (as measured in 1967). (JS)

N-SG

ED030613

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

A MODIFIED TEACHER PREPARATION PROGRAM AT THE UNIVERSITY OF HAWAII

PROJECT A

UNIVERSITY OF HAWAII—DEPARTMENT OF EDUCATION
PROJECTS FOR THE IMPROVEMENT OF EDUCATION IN HAWAII
(Supported by a grant from The Ford Foundation)

DONALD G. ATEN

EDUCATION RESEARCH AND DEVELOPMENT CENTER
COLLEGE OF EDUCATION
UNIVERSITY OF HAWAII

OCTOBER, 1967

SP002835

TABLE OF CONTENTS

Chapter Page

1 PROJECT A--TEACHER EDUCATION CURRICULUM 1

Introduction: 1
Overview; Purposes of experimental program; Liberal Arts Committee; Liberal Arts Committee report; Emphasis on communication and language; General education courses

The Ford (Experimental) Program--Professional Education: 10
Professional Education Committee; Professional Education Committee report; Professional Education Courses

The Regular Program: 17
Background; the curricula

The Subjects: 26
Assignment to the programs; Comparison of the two groups; Determination of current status of each subject; The classification scheme; The Ns of the various classifications

Project A in Perspective 38

2 UNDERGRADUATE PROGRAMS 40

Introduction: 40
Major program differences; Source of data; Comparison in terms of stratification variables; Semester hours and grade points

General Education--Communication and Language Courses: 42
Ford program emphasis on communication and language; English; Mathematics, Foreign language; Music

General Education--Other Courses 61

General Education--Total Program 61

Professional Education--Student Teaching 63

Professional Education--Education Courses: 66
Ford program requirement; Regular program requirement; Education Courses Completed

Professional Education--Total Program 73

The Undergraduate Programs in Perspective: 75
Degree requirements and overall grade point averages

Chapter Page

3 STUDENT TEACHING 78

Introduction: 78
Major program differences; Organization of the student teaching program; Source of data; Methods of reporting assessments

Student Teaching--Elementary: 81
Comparison in terms of stratification variables; Instrument; Comparison of ratings; Program differences and performance differences; In-the-classroom relationships; Planning and executing instruction; Evaluation and Counseling; Out-of-the-classroom relationships; Personal and professional considerations; Overview of elementary student teaching; Assumptions about rater error

Student Teaching--Secondary: 92
Comparison in terms of stratification variables; Instrument; Comparison of ratings; Personal qualifications; Ability to work with people; Professional preparation; Teaching skills and techniques; Classroom management; Evaluation of teacher progress; Overview of secondary student teaching

Student Teaching in Perspective 104

4 NATIONAL TEACHER EXAMINATIONS 106

Introduction: 106
The examinations; Interpreting NTE scores; Source of data; Comparison in terms of stratification variables

Common Examinations--General Education Tests: 113
Comparison of scores; Advisory part scores; Social studies, literature, and fine arts; Science and mathematics; Written English expression; Comparison by level; Comparison with normative data

Common Examination--Professional Education Tests: 123
Comparison of scores; Psychological foundations of education; Societal foundations of education; Principles and practices of teaching; Comparison with normative data

Teaching Area Examinations--Elementary: 128
Comparison of scores; Comparison with normative data

Teaching Area Examinations--Secondary: 130
Comparison of scores; Comparison with normative data

Chapter Page

5 INTERN TEACHING 136

Introduction:
Intern teaching program; Methods of reporting assessment; Source of data; Assumptions about rater error 136

Intern Teaching--Elementary:
Instrument; Comparison of ratings 139

Intern Teaching--Secondary:
Instrument; Comparison of ratings; Teaching skills; Self evaluation; Control and discipline; Knowledge of subject taught 143

Intern Teaching in Perspective 149

6 CLASSROOM OBSERVATIONS 152

Introduction:
Observation program; Source of data 152

The Observation Instrument:
Selection of the Instrument; Development of the instrument 153

The Classroom Observation Program:
Observer training; Number and duration of observations; Measures to minimize observer error; Procedures for processing observation data 165

Reliability of the Assessments:
Factors which limit reliability; Reliability of assessments in this study 172

The Teacher Behavior Patterns:
Comparison of assessments; Teacher behavior patterns--elementary; Teacher behavior patterns--secondary 178

Classroom Observations in Perspective 182

Chapter | Page

7 TEACHER ATTITUDES, EDUCATIONAL VIEWPOINTS, VERBAL UNDERSTANDING, AND ADJUSTMENT 184

Introduction: 184
Objectives; Preliminary effort; Selection of the instrument; Source of data

Development of the Instrument: 190
Overview; Use of correlates in the TCS; Attitude variables (R, R_1, and Q); Educational viewpoints variable (B); Verbal understanding and adjustment variables (I and S); Susceptability of TCS to "faking"

Administration and Scoring: 197
Administration; Scoring

Teacher Attitudes and Educational Viewpoints: 198
Comparison of scores; Attitudes and viewpoints--elementary; Attitudes and viewpoints--secondary; Professional/general education and educational viewpoints; Elementary/secondary comparisons

Teacher Verbal Understanding and Adjustment: 206
Comparison of scores

Attitudes, Viewpoints, Understanding, and Adjustment in Perspective 207

APPENDIX 210

CHAPTER 1

PROJECT A--TEACHER EDUCATION CURRICULUM

Introduction

Overview

In 1959 the College of Education, University of Hawaii, submitted a proposal[1] to the Fund for the Advancement of Education[2] soliciting assistance for five "projects" which were believed to " . . . have direct relevance to some perennial educational controversies, and specific relevance to the improvement of the quality of education in Hawaii."[3]

One of the projects called for the development and initiation of an "experimental" teacher education curriculum. The "experimental" program[4] would exist apart from (but concurrent with) the established teacher education program.[5] Thus, students entering the College of Education would be enrolled in either the Ford program or the regular program.[6]

---

[1] College of Education, University of Hawaii, "A University Project for Improvement of Education in Hawaii," The College of Education, Honolulu, 1959, 44 p., Mimeographed.

[2] The Fund for the Advancement of Education was created in 1951 by the Ford Foundation. " . . . It was assigned the task of investigating and giving initial support to those ideas, experiments, and demonstrations that seemed to offer at least partial solutions to problems plaguing American schools and colleges." The Fund for the Advancement of Education, Decade of Experiment, New York, The Fund for the Advancement of Education, 1961, p. 15.

[3] College of Education, op. cit., p. 1.

[4] The "experimental" program soon became known as the "Ford program" and the students enrolled in it became known as "Ford students."

[5] The established program was referred to as the "regular program" and the students enrolled in it were called "regular students."

[6] The distinctions between the Ford and regular teacher education programs will be discussed in detail in this chapter and in subsequent chapters.

The proposal was funded in 1960 and "Project A--Teacher Education Curriculum" was initiated. The first three years of the Ford program was devised by a " . . . committee consisting of faculty members from the liberal arts departments of the University[7] . . . "[8] The last two years of the program[9] was developed by another committee comprised of members of the College of Education faculty.[10]

The first generation of Ford students[11] entered the College of Education as freshmen in September, 1961. Thus began a program which proved to be the precursor of substantial change in teacher education in Hawaii.

Purposes of experimental program

It is asserted in the proposal[12] that the " . . . most frequently occurring pattern is that in which . . . liberal arts courses [are] distributed throughout the total teacher education curriculum . . . "[13] Moreover, the character of the general (liberal arts) education[14] program is determined by " . . . those [courses] which are [considered to be] most relevant to the achievement of . . . professional education objectives"[15] rather than the objectives appropriate to a well-conceived liberal (general) education program for prospective teachers. The concern, then, was that the general education courses in teacher education are diffused over the total program[16] and are subservient to professional objectives.[17] In short, it is urged that the general education program in the typical teacher education curriculum lacks unity, coherence, and direction.

---

[7] This committee became known as the "Liberal Arts Committee."

[8] College of Education, op. cit., p. 15.

[9] The Ford program was to be a five-year program. The existing (regular) teacher education program had been a five-year program for several decades (see "Background").

[10] This committee became known as the "Professional Education Committee."

[11] There were several succeeding generations of Ford students in subsequent years.

[12] See footnote 1.

[13] College of Education, op. cit., p. 11.

[14] See footnote 1 in Chapter 2 for the definition of "general education" (and "professional education") as employed in this discussion.

In view of the state of general education in teacher education programs,[18] it is urged in the proposal that " . . . greater attention to the liberal arts as a coherent unit might be more effective for both the objectives of . . . professional education and the objectives of . . . liberal arts [general education] . . . "[19] To this end, then, an " . . . [experimental] teacher education curriculum in which the first three years comprise exclusively the liberal arts and the last two years are largely defined by professional [education] . . . "[20] is advocated.

Turning to professional education, the position assumed in the proposal was " . . . that a teacher education curriculum in which . . . the last two years are largely defined by professional seminars and practicums . . . will result in better achievement of the objectives [of professional education] . . . "[21] The development of an experimental professional education program, which would " . . . incorporate features which have demonstrated their effectiveness"[22] at the University of Hawaii and elsewhere,[23] would permit an evaluation of this position.

---

[15] College of Education, op. cit., p. 11.

[16] That is, the general education courses are spread over four or five years.

[17] Rather than serving the objectives of general (liberal) education.

[18] At the time the proposal was written.

[19] College of Education, op. cit., p. 12.

[20] Ibid., p. 13.

[21] Loc. cit.

The Ford (Experimental) Program--General Education

Liberal Arts Committee

The general education program of the Ford teacher education curriculum, it will be recalled, was to be developed by a " . . . committee consisting of faculty members from the liberal arts departments of the University."[24] The Liberal Arts Committee included five professors from the College of Arts and Sciences.[25]

The charge to the Liberal Arts Committee as indicated in the proposal was that of:

> . . . defining the objectives judged to be appropriate for a liberal arts program in a university. These objectives are to be viewed as those which are appropriate for any university student, no matter what his area of specialization may be. . . . [There are, however, two] limitations . . . First, the objectives must be defined with the knowledge that a three year liberal arts program is involved;[26] second, the objectives should be defined with an understanding of the professional education objectives . . .[because] many of the competences [needed by] . . . the professional teacher [require] . . . substantive understanding and knowledge in [disciplines] . . . which are organized in terms of the liberal arts . . . "[27]

---

[22] Ibid., p. 16.

[23] These include a "practicum," a "seminar," and "a semester of internship" (see College of Education, op. cit., p. 16-17).

[24] College of Education, op. cit., p. 15.

[25] The disciplines (departments) represented were chemistry, European languages, microbiology, music, and psychology.

[26] As will be indicated subsequently, the courses prescribed by the Professional Education Committee for the last two years of the Ford program included 23-29 semester hours (see "Semester hours and grade points" in Chapter 2) of general education courses for elementary students and 25-31 semester hours of general education courses for secondary students.

[27] College of Education, op. cit., p. 15.

Liberal Arts Committee report[28]

At the onset the Liberal Arts Committee rejected an approach which would involve mere " . . . tinkering with the existing arts and sciences portion of the present [regular] College of Education curriculum . . . "[29] Instead, the Committee proposed " . . . a basic reorganization of the [general education] curriculum . . . "[30]

The report decries the fragmentation of liberal arts and sciences programs " . . . into two large areas: the natural sciences and mathematics as one group of studies, and the arts, humanities, and social sciences as the other."[31] The Committee maintains that " . . . [s]tudents presently are educated in one of these two areas and have only a fleeting contact with the others."[32]

The Liberal Arts Committee asserts that " . . . [t]his fragmentation has weakened liberal education in several ways, but most serious is the loss of synthesis in knowledge . . . "[33] and, consequently, " . . . a new attempt at synthesis in liberal education appears to be of paramount importance."[34]

The " . . . attempt at synthesis" proposed by the Liberal Arts Committee " . . . centers around the means of communication and the structure of language, with the last being defined as any system of symbols designed for the communication of facts, ideas, and feelings . . . , the English language, any foreign language, mathematics, music, the visual arts--in fact, any system of communication."[35]

---

[28] "Report of Liberal Arts Committee: Project A, Teacher Education," University of Hawaii, Honolulu, 1961, 18 p., Mimeographed.

[29] Ibid., p. 1.

[30] Loc. cit.

[31] Ibid., p. 2.

[32] Ibid., p. 2-3.

[33] Ibid., p. 3.

[34] Loc. cit.

Emphasis on communication and language

The general education program prescribed by the Liberal Arts Committee then, focused on communication in a broad sense and emphasized the structure of the various "languages" through which man communicates, e.g., verbal languages, both English and foreign languages, the language of mathematics, the language of music, and the like. Thus, each student enrolled in the Ford program was expected to study each of three "language systems" in each of six semesters--the English language,[36] a foreign language,[37] the mathematics[38]--as well as a sequence in the arts.[39]

General education courses

The general education courses prescribed for students enrolled in the Ford program are indicated in the following excerpts[40] from the Liberal Arts Committee report:

---

[35] Ibid., p. 4.

[36] "The need to improve standard of oral and written English is apparent to all . . . " Loc. cit.

[37] "The public has recently become widely persuaded of the need to study foreign languages and is generally aware of the values to be derived from them." Loc. cit.

[38] " . . .[t]he courses proposed are not those offered to future engineers and physicists, nor, on the other hand, are they diluted versions of the same material . . . They are new courses, involving new content and new presentation, . . . [and]stressing concepts and symbolic structure rather than computation." Ibid., p. 4-5.

[39] "Music and the visual arts are included . . . because a knowledge of them contributes to the development of an enlightened and cultured person." Ibid., p. 6.

[40] Ibid., p. 10-12.

First Year

First Semester	Credits	Second Semester	Credits
English 101 Composition	3	English 102 Composition	3
Foreign Language 101 or 151 Elementary or Intermediate	3	Foreign Language 102 or 152 Elementary or Intermediate	3
Mathematics 111 Introduction to Mathematics	3	*Mathematics 112 College Algebra and Trigonometry	3
Art 101 Introduction to the Visual Arts	3	Art 102 Studio in the Visual Arts	3
Music Activity	1	Music Activity	1
Philosophy 100 Introduction to Philosophy	3	Speech 110 Sounds of English for Prospective Teachers	1
Education 100[41] Orientation	1	Speech 140 Fundamentals of Oral Communication	2
Health and Physical Education 101 or 102 Individual and Team Sports	1	Health and Physical Education 101 or 102 Individual and Team Sports	1
Military or Air Science	0	Military or Air Science	1
Total	18	Total	17 or 18

Notes

1. The asterisk denotes a new course.
2. If the student's secondary school preparation qualifies him to do so, he will take the intermediate foreign language course (second year college level).
3. If the student's secondary school preparation qualifies him to do so, he will take Mathematics 113 and 114 (see next page) in the place of 111 and 112.

---

[41] Although Education 100 was prescribed for one semester (one semester hour of credit), it was extended over two semesters and afforded two semester hours of credit (see the second paragraph of "Ford Program requirement" and footnote 36 in Chapter 2).

4. The Committee felt it would be desirable to provide the students with an orientation to their experimental curriculum through the medium of Education 100.

Second Year

First Semester	Credits	Second Semester	Credits
(English 150 (British and American (Literature (or	3	(English 151 (British and American (Literature (or	3
(English 152 (World Literature	3	(English 153 (World Literature	3
Foreign Language 151 or upper division language course	2 or 3	Foreign Language 152 or upper division language course	2 or 3
*Mathematics 113 Concepts of Analytic Geometry and Calculus	3	*Mathematics 114 Concepts of Analytic Geometry and Calculus	3
Music Activity	1	Music Activity	1
(Science 120 (Introduction to Science (or	4	(Science 121 (Introduction to Science (or	4
(A particular physical or (biological science	4 or 5	(A particular physical or (biological science	4 or 5
Psychology 104 Introduction to Psychology	3	Psychology 158 Developmental Psychology	3
Military or Air Science	1	Military or Air Science	1
Total	16 to 19	Total	16 to 19

Notes

1. The asterisk denotes a new course.
2. If the student has taken the intermediate foreign language course in his first year, he will take an upper division foreign language course (third year college level).
3. If the student has taken Mathematics 113 and 114 in his first year, he will take Mathematics 201 and 202 in their place (see next page).
4. Science 120 and 121, considered a general science course and not merely a survey course, treats the methods and philosophy of science, the understanding of nature, and the relationships of science and society. However, a student may take courses in a particular physical or biological science instead, particularly if he is preparing to teach that science.

Third Year

First Semester	Credits	Second Semester	Credits
One year of courses in writing, literature, semantics[42]	3		3
(Foreign language upper (division course	2 or 3	(Foreign language upper (division course	2 or 3
(or		(or	
(Elective in any subject	2 or 3	(Elective in any subject	2 or 3
*Mathematics 201 Mathematics of Information	3	*Mathematics 202 Mathematics of Information	3
History 151 World Civilization	3	History 152 World Civilization	3
*Man in Society[43]	3	*Man in Society	3
Elective	2 or 3	Elective	2 or 3
Total	16 to 18	Total	16 to 18

Notes

1. The asterisk denotes a new course.
2. If the student has taken upper division foreign language courses in his second year, he will take elective courses in any subject in their place.
3. If the student has taken Mathematics 201 and 202 in his second year, he will take elective courses in any subject in their place.
4. The new course, "Man in Society," is conceived as an interdepartmental course in the social sciences,--anthropology, economics, government, psychology, and sociology. It is intended as a general course and not merely a survey of the social sciences. Its theme, "Man in Society," complements the theme, "Man the Individual," presented by Psychology 104 and 158 in the second year.
5. For students preparing to be elementary teachers, the elective courses may be chosen in any subject. For those preparing to be secondary teachers, they will normally be chosen in the student's teaching field.

---

[42] See the first paragraph of "English" in Chapter 2.

[43] This course was not initiated until the 1964-65 academic year and, consequently, the first generation of Ford students (with a few exceptions) were unable to enroll in the course. Instead, they enrolled in other social science courses.

6. As notes 2, 3, and 5 indicate, the student who is preparing to be an elementary teacher and whose own secondary school preparation has been adequate, will have as many as eighteen elective credits in his third year. The student who is preparing to be a secondary teacher will have the same number of credits to devote to his teaching field.
7. It is expected that during the fourth and fifth years three symposia, each for two semester credits, will be added to the curriculum,--a Symposium in the Arts, a Symposium in the Humanities, and a Symposium in Contemporary Life.[44] Their purpose is to provide a culmination to the liberal arts curriculum of the first three years.

The Ford (Experimental) Program--Professional Education

Professional Education Committee

It was indicated previously that the task of developing the professional education program of the Ford teacher education curriculum was assigned to the Professional Education Committee. The membership of the Professional Education Committee varied from five to seven individuals and eight different College of Education faculty members served at one time or another.[45]

The charge to the Professional Education Committee as indicated in the proposal was that of " . . . defin[ing] . . . the teacher competences that are considered to be appropriate objectives for the University program in teacher preparation."[46]

---

[44] Although the professional education program prescribed by the Professional Education Committee included the three symposia (see the last paragraph of "Professional Education Committee report"), the courses were never instituted.

[45] The departments represented were educational psychology, elementary education, history and philosophy of education, and secondary education.

[46] College of Education, *op. cit.*, p. 14.

Professional Education Committee report

The report[47] of the Professional Education Committee indicated the " . . . areas of professional knowledge . . . in which we [the Professional Education Committee] would desire our teacher education candidates to develop highest competencies:"[48]

> 1. The process of learning.
>
> The teacher education candidate should have the ability to translate this knowledge into pertinent behavior in acting and reacting with pupils in the teaching-learning situation.
>
> 2. Individual growth and development.
>
> The candidate should have the ability to provide challenges commensurate with each of his pupils maturity, capacity to learn and previous experiences.
>
> 3. Teaching techniques, methods and materials of instruction.
>
> The candidate should have competencies in using techniques, methods, and teaching materials most suitable for the specific purposes in guiding the learning process.
>
> 4. The American Society.
>
> The candidate should have knowledge of the American social scene and the role of the school.
>
> 5. History and Philosophy of Education.
>
> The candidate should have a knowledge of the historic role of the school and a growing philosophy of education which should give him direction and guidance as he works with boys and girls in our democratic society.[49]

---

[47] "Preliminary Report of Professional Education Committee[:] Project A, Teacher Education," [Honolulu], University of Hawaii, May 31, 1962, 6 p., Mimeographed.

[48] *Ibid*., p. 2.

[49] *Loc*. *cit*.

The following excerpt[50] from the report describes the professional education program[51] which the Professional Education Committee formulated for the last two years of the Ford teacher education curriculum:

4th Year	Semester I	Credits
Education I [52] The Learner and the Curriculum, O.P.		5
Symposia: [53]		
Humanities		2
Art		2
*Electives		7-9
Total		16-18

4th Year	Semester II	Credits	
		Elem.	Sec.
Education II [54]		16	14
A. Curric., Methods, Tests and Measurements		(10)	(8)
B. Student Teaching		(6)	(6)
*Electives		0-2	2-4
	Totals	16-18	16-18

---

[50] Ibid., p. 5.

[51] Although the program developed by the Professional Education Committee was entitled "The 2-Year Professional Education Program," it prescribed from 23-31 semester hours of general education courses (see footnote 26).

[52] "Education I" evolved as "Educational Psychology 374 - General Educational Psychology."

[53] See footnote 44.

[54] "Education II" evolved as two sequences of courses. The elementary students enrolled in "Elementary Education 380 - Curriculum and Instruction" and "Elementary Education 394 - Student Teaching, Elementary" concurrently. The secondary students enrolled in "Secondary Education 230 - Secondary Education," "Secondary Education 290 - Participation Teaching," "Secondary Education 394 - Student Teaching, Secondary," and one other "Secondary Education" course which was essentially a "methods" course related to a secondary "teaching major," e.g., "Secondary Education 330 - Language Arts, Secondary," "Secondary Education 333 - Science, Secondary," or "Secondary Education 334 - Mathematics, Secondary."

5th Year	Semester I	Credits	5th Year	Semester II	Credits
Education III[55] History, Philosophy, Soc. Foundations		4	Internship		14
			Seminar		2
Symposium in Contemp. Life[56]		2			
*Electives		10-12			
	Total	16-18		Total	16

---

* Elementary Minor[57] - 24 semester hours
Secondary Education T.F.C.[58]

---

[55] "Education III" evolved as "History and Philosophy of Education 520 - Foundations of American Education."

[56] See footnote 44.

[57] The "Elementary Minor" is referred to as the "academic minor" in this discussion. Although the available records are not explicit, it appears that the "elementary minor" requirement for (both Ford and regular) elementary students was initiated during the 1961-62 academic year. The fulfillment of an "academic minor" involved completing a given number of semester hours of courses in a certain discipline or combination of disciplines.

[58] The "teaching field concentration," or "T.F.C.," is referred to as the "teaching major" in this discussion. The "teaching major" of a secondary student is the discipline(s) which he expects to teach, e.g., English, mathematics, or social studies.

Professional Education Courses

The Professional Education Committee then turned its attention to its " . . . second task . . . , that of developing the course prospectuses of the [three] professional courses . . . "[59] The following excerpts from the attachment to a memorandum prepared by the Professional Education Committee[60] indicate the objectives and content of the three education courses devised for the Ford program:

[Education I[61]]

General objectives of the course:

Education I is designed to help the student

1. Understand principles of learning (cognitive, affective, and performance)
2. Understand the ways in which individuals differ and the implications of individual differences for education
3. Understand the meaning of personality and mental hygiene

Course content areas include:

1. Learning theory (motivation, cues, reinforcements; retention and acquisition; problem solving; creativity; higher mental processes)
2. Individual differences (intellectual differences; emotional differences; socialization differences; differences related to sex, age, etc.)
3. Personality and mental hygiene: (case study methods; influence of personality on classroom behavior; concepts of normality and abnormality; psychological meaning of discipline; methods of dealing with emotionally disturbed children)

---

[59] Andrew W. S. In, "The Professional Education Program in the UH-DE Project for Improvement of Education in Hawaii," [Honolulu, University of Hawaii], April 17, 1964, p. 2, Typewritten. Professor In was chairman of the Professional Education Committee.

[60] "Memorandum to: Dean Hubert V. Everly, From: Professional Education Committee . . . , Subject: Report of Committee on Course Prospectuses for Education I, II, and III," dated June 14, 1963, Typewritten, with attachment titled "Course Prospectus for Education I," "Course Prospectus for Education II," and "Course Prospectus for Education III," 5 p., Mimeographed.

[61] See footnote 52.

[Education II[62]]

General objectives of the course:

Education II is designed to provide the teacher candidate with

1. An understanding of the purposes and functions of the elementary and secondary schools in the United States
2. Knowledge, skills, and attitudes which are required for successful assumption of roles performed by the teacher in the classroom, school, and community
3. Opportunity to relate theory with practice through directed teaching experiences in an actual school setting

Course content areas include:

1. Development of elementary and secondary education on the Mainland United States and Hawaii. Discussion on goals and objectives.
2. Concepts of curriculum organization and their relationships to school and classroom situations. Discussion on principles, practices and problems.
3. Role of the teacher. Discussion on duties and responsibilities of teachers in
    a. Planning
    b. Classroom management
    c. Motivating learning
    d. Discipline
    e. Appraisal and evaluation
    f. Record keeping
    g. Guidance work
    h. Testing programs
    i. Reporting to parents
    j. Extra-class activities
    k. Professional relations and ethics
4. Discussion of special methods and development of instructional materials.

---

[62] See footnote 54.

[Education III[63]]

General objectives of the course:

Education III is intended to help students develop a theoretical foundation for a social philosophy of education, considering particularly the following problems:

1. The nature of professions and the role of teaching as a developing profession
2. Concepts of human nature and the role of the school in developing human personality
3. Theories of knowledge--e.g., revelation, experience, reason, science--and the school's function according to each
4. Views of society and the function of the school as a social institution
5. Sources of value--e.g., God, mores, tradition, society--and the effect of the school on value development in the child
6. Social issues and their relationship to schools
7. The structure of the American school system

Course content:

Course content will be drawn from the following disciplines:

1. Philosophy--theories of knowledge, value theory, ethics, logic
2. History--history of Western civilization, particularly the United States; history of philosophy; history of education, particularly in the United States
3. Economics--particularly the effect on school financing and curriculum development
4. Sociology--particularly the influence of social classes and castes in America on the curriculum and on equality of educational opportunity and the effect of organized interest groups ("lobbies") on curriculum and educational materials
5. Political Science--the meaning of democracy and competing theories of government and the relationship of political agencies and education
6. Cultural Anthropology--the development of social institutions and their effects upon individuals.

---

[63] See footnote 55.

The Regular Program

Background

The University of Hawaii pioneered the five-year teacher education program at a time when, in most parts of the nation, the two-year normal school program was considered adequate for the preparation of teachers. As early as 1931 Teachers College[64] had established a five-year program for prospective secondary teachers and a four-year program for elementary teachers,[65] and by the mid-1930's " . . . [r]equirements . . . were raised to five years for both elementary and secondary school teachers."[66]

The full-time one-semester student teaching practicum[67] (" . . . [i]nstead of the student dividing his time between both study and practice [student teaching] . . . "[68]) was initiated in the early 1920's[69] and about a decade hence a " . . . semester of interne experience, under supervision . . . [70]"[71] was incorporated in the five-year program. The regular program, then, was one which had existed, in concept at least, for several decades.

---

[64] The College of Education was formerly called Teachers College.

[65] Benjamin O. Wist, A Century of Public Education in Hawaii, Honolulu, Hawaii Educational Review, 1940, p. 213.

[66] Ibid., p. 214.

[67] See "Major program differences" in Chapter 3.

[68] Wist, op. cit., p. 208.

[69] The supplanted student teaching practicum seems to have been not unlike that prescribed in the Ford program in that both required part-time student teaching and concurrent enrollment in courses (see footnote 67).

[70] See "Intern teaching program" in Chapter 5.

[71] Wist, op. cit., p. 214.

The curricula

The regular program incorporated two curricula--one for prospective elementary teachers (elementary students) and one for prospective secondary teachers (secondary students). Generally, each curriculum included two years during which the emphasis was almost exclusively on general education[72] and three years during which the student was to engage in both general and professional education[73] but with the emphasis on professional education.[74]

The following excerpt from the University of Hawaii Bulletin[75] delineates the regular program (as it existed at the time the first generation of students was enrolled in the Ford program[76]):

---

[72] See footnote 14.

[73] In varying proportions from semester to semester.

[74] More so in the case of the elementary students than the secondary students.

[75] University of Hawaii Bulletin, 40: 82-83, June, 1961.

[76] September, 1961.

ELEMENTARY AND SECONDARY CURRICULA

FIRST YEAR

First Semester	Credits	Second Semester	Credits
Education 100 [Orientation]	1	Education 101 [Orientation]	1
English 101 [Composition]	3	English 102 [Composition]	3
Health & Phys. Ed. 101 [Individual and Team Sports]	1	Health & Phys. Ed. [sic]	1
History 151 [World Civilization]	3	History 152 [World Civilization]	3
AS 91 or MS 101 [First-Year Air Science or First-Year Military Science]	0-1	MS or AS 102 [First-Year Military Science or First-Year Air Science]	1
Mathematics 111[a] [Introduction to Mathematics]	3	Psychology 102 [General Psychology]	4
Gen. Science 120[b] [Introduction to Science]	4	Gen. Science 121[b] [Introduction to Science]	4
Speech 140 [Fundamentals of Oral Communication]	2		
Total	18 or 17	Total	17

---

[a] Mathematics 103 [College Algebra] may be substituted.

[b] Chemistry 105-106 [General Chemistry--Qualitative Analysis] may be substituted.

[ELEMENTARY CURRICULUM]

SECOND YEAR

[First Semester]	[Credits]	[Second Semester]	[Credits]
Art 103 [Art Fundamentals]	2	Art 104 [Art Fundamentals]	2
English 150 or 152 [Major Works of British and American Literature or World Literature]	3	Education 220 [Elementary Education]	4
History 171 [Introduction to American History]	3	English 151 or 153 [Major Works of British and American Literature or World Literature]	3
AS or MS 151 [Second-Year Air Science or Second-Year Military Science]	1	Government 110 [Introduction to Government]	3
Music 150 [Elementary Musicianship]	3	Health & Phys. Ed. 130 [Personal Hygiene]	1
Philosophy 100 [Introduction to Philosophy]	3	MS 152 or AS 94 [Second-Year Military Science or Second-Year Air Science]	1-0
Psychology 150 [Psychology of Infancy and Childhood]	2	Speech 110 [Sounds of English for Prospective Teachers]	1
		Elective[c]	3
Total	17	Total	18 or 17

---

[c] Anthropology 150 [Introduction to Anthropology], Economics 140 [Introduction to Economics], or Sociology 151 [Introduction to the Study of Society].

[ELEMENTARY CURRICULUM]

THIRD YEAR

[First Semester]	[Credits]	[Second Semester]	[Credits]
Education 221 or 224 [The Elementary School Program or The Kindergarten-Primary Program]	4	Education 322 [Social Studies, Elementary]	2
Education 225 [Children's Literature]	2	Education 323 [Science, Elementary]	2
Education 320 [Language Arts, Elementary]	3	Education 324[77] [Mathematics, Elementary]	2
Music 251 [Music, Elementary Curriculum]	2	Education 326 [Creative Art, Elementary]	2
Sociology 232 [Community Forces in Hawaii]	3	Health & Phys. Ed. 221 [Physical Education, Elementary]	2
Speech 135 [Reading to Children	1	Music 252 [Music, Elementary Curriculum]	2
Elective	2	Elective	5
Total	17	Total	17

---

[77] See the third paragraph of "Regular program requirement" in Chapter 2.

[ELEMENTARY CURRICULUM]

FOURTH YEAR

[First Semester]	[Credits]	[Second Semester]	[Credits]
Education 309 [Tests and Measurements]	3	Education 390 [Student Teaching, Elementary]	14
Geography 401 [World Geographic Patterns]	3	Education 391 [Seminar for Student Teachers]	2
Health & Phys. Ed. 230 [School Health Problems]	2		
Psychology 472[78] [Educational Psychology]	3		
Speech 365 [Speech for the Classroom Teacher]	3		
Elective	2		
Total	16	Total	16

---

[78] See the first paragraph of "Regular program requirement" and footnote 37 in Chapter 2.

SECONDARY CURRICULUM

SECOND YEAR

First Semester	Credits	Second Semester	Credits
English 150 or 152 [Major Works of British and American Literature or World Literature]	3	English 151 or 153 [Major Works of British and American Literature or World Literature]	3
Government 110 [Introduction to Government]	3	History 171[d] [Introduction to American History]	3
Health & Phys. Ed. 130 [Personal Hygiene]	1	MS 152 or AS 94 [Second-Year Military Science or Second-Year Air Science]	1-0
AS or MS 151 [Second-Year Air Science or Second-Year Military Science]	1	Psychology 152 [Psychology of Adolescence and Maturity]	2
Philosophy 100 [Introduction to Philosophy]	3	Elective[e]	8-9
Elective[e]	6		
Total	17	Total	17

---

[d] Social Studies majors substitute History 461-462 [History of the United States to 1876] or History 463-464 [History of the United States since 1877].

[e] As required to meet teaching field concentrations, but must include Anthropology 150 [Introduction to Anthropology], Economics 140 [Introduction to Economics] or Sociology 151 [Introduction to the Study of Society].

[SECONDARY CURRICULUM]

THIRD YEAR

[First Semester]	[Credits]	[Second Semester]	[Credits]
Education 230 [Secondary Education]	5	Education 330[f] [Language Arts, Secondary]	3
Sociology 232 [Community Forces in Hawaii]	3	Health & Phys. Ed. 230 [School Health Problems]	2
Elective[g]	8	Elective[g]	11
Total	16	Total	16

FOURTH YEAR

Education 309 [Tests and Measurements]	3	Education 390 [Student Teaching, Secondary]	14
Psychology 472 [Educational Psychology]	3	Education 391 [Seminar for Student Teachers]	2
Speech 365[h] [Speech for the Classroom Teacher]	3		
Elective[g]	7		
Total	16	Total	16

---

[f] For other teaching fields, appropriate methods courses will be substituted.

[g] As required to meet teaching field concentrations, but must include Anthropology 150 [Introduction to Anthropology], Economics 140 [Introduction to Economics] or Sociology 151 [Introduction to the Study of Society].

[h] Speech majors substitute Speech 369 [Techniques of Speech Improvement].

ELEMENTARY AND SECONDARY CURRICULA

FIFTH YEAR

[First Semester]	[Credits]	[Second Semester]	[Credits]
Education 655 [Philosophy of Education]	3	Education 690 [Internship]	14
Education 680 [Public School Organization]	2	Education 691 [Seminar for Intern Teachers]	2
Elective (Education)[i]	5		
Elective	6		
Total	16	Total	16

---

[i] Must include Education 620 [Teaching Reading in the Elementary School] in the elementary curriculum.

The Subjects

Assignment to the programs

The 330 students who were to enter the College of Education as freshmen in September, 1961,[79] were assigned to various strata in terms of six variables:[80] (1) Ohio State University Psychology Test data, (2) class standing in secondary school,[81] (3) size of secondary school, (4) location[82] of secondary school, (5) type[83] of secondary school, and (6) sex.

The members of each strata were then randomly assigned to the two programs--1965 to the Ford program and 165 to the regular program.

Comparison of the two groups

The chi square test[84] was employed (in 1966) to determine the extent (significance) or the differences[85] (if any) between the students who had been assigned to the Ford program[86] and those who had been assigned to the regular program.[87]

The variable codes and category codes which have been developed in an effort to simplify Table 1.1[88] are:

---

[79] The University of Hawaii Bulletin, 41:257, June, 1962, indicates that 481 freshmen entered the College of Education in September, 1961. However, only 330 of them were subjects.

[80] Henceforth in this chapter, and in subsequent chapters, these variables are referred to as the "stratification variables."

[81] That is, the secondary school from which the subject graduates.

[82] That is, geographical location.

[83] That is, public or non-public.

[84] The procedures employed in the computation of chi square are described in the appendix.

[85] In terms of each of six stratification variables.

[86] N = 165 or (see "The classification scheme" and Figure 1.1) F = 165.

[87] N = 165 or (see "The classification scheme" and Figure 1.2) R = 165.

[88] And similar tables in subsequent chapters.

Variable OP - Ohio State University Psychological Test Data

Category	Decile
A	10
B	9
C	8
D	7
E	6
F	5
G	4
H	3
I	2
J	1

Variable CS - Class Standing in Secondary School

Category	Quintile
A	5
B	4
C	3
D	2
E	1
Z	Unknown[89]

Variable SS - Size of Secondary School

Category	Size
A	499 or less
B	500-999
C	1000-1499
D	1500-1999
E	2000 or more

Variable LS - Location of Secondary School

Category	Location
A	Oahu
B	Hawaii, Lanai, Kauai, Maui, or Molokai

---

[89] It seems likely that the class standing of all of the subjects was known at the time that they were assigned to the strata (1961). At the time this study was initiated (1966), however, it was impossible to locate data which reveal the class standing of six of the subjects (see Table 1.1, Variable CS, Category Z).

Variable TS - Type of Secondary School

Category	Type
A	Public
B	Non-public

Variable S - Sex

Category	Sex
A	Male
B	Female

Table 1.1

Distribution of Two Groups of Students on Six Stratification Variables

		Category												
Variable	Group	A	B	C	D	E	F	G	H	I	J	Z	Chi Square	p
OP	F	3	9	22	28	33	27	31	11	1	0		1.00	> .99
	R	2	11	20	28	37	26	28	13	0	0			
CS	F	110	28	20	2	1						4	1.02	.70 < .50
	R	94	47	21	1	0						2		
SS	F	8	24	30	31	72							1.00	.95 < .90
	R	9	17	31	33	75								
LS	F	146	19										.03	.90 < .80
	R	144	21											
TS	F	145	20										.03	.90 < .80
	R	147	18											
S	F	4	161										1.29	.30 < .20
	R	9	156											

The chi square data in Table 1.1 reveal that the two groups do not differ significantly on any of the stratification variables. There is virtually no difference between the groups on variables OP, SS, LS, and TS. There is a slight difference on variable CS[90] and a fairly substantial[91] (but non-significant) difference on variable S.

Determination of current status of each subject

The initial effort in this study was to acquire the data needed to classify the subjects according to their current[92] status. The task of securing data on individuals who had been assigned to the two groups five years earlier proved to be somewhat more arduous than had been anticipated.

The basic procedures employed were two: (1) examination of all the various official and unofficial records available[93] and (2) questionnaires directed to each individual. However, each of the methods posed difficulty.

The official (and unofficial) records were difficult (and, in some instances, impossible) to locate. The records which were available were often incomplete and/or inaccurate.

It was not always possible to secure mailing addresses and those that were available were frequently inaccurate. The mobility of the subjects[94] and the fact that a number of the female subjects[95] entered into matrimony without informing the College of Education or the University of Hawaii[96] of their married names further compounded the problem.

---

[90] The Ford group has more fifth-quintile and less fourth-quintile students than the regular group.

[91] The Ford group has more female students and less male students than the regular group. Although the difference is "substantial" in terms of its impact on the value of chi square, it is probably not crucial since the relative proportion of males in both groups is almost negligible.

[92] That is, their status as of the time this study commenced, the fall of 1966.

[93] From all possible sources, e.g., various divisions of the College of Education, the University of Hawaii, the Hawaii Department of Education (see footnote 5 in Chapter 3) and other similar agencies.

[94] Both during and after their tenure at the University of Hawaii.

Nonetheless, it proved possible to acquire sufficient data to classify all but five of the 330 individuals[97] who had been assigned to the Ford and regular programs in the fall of 1961.

The classification scheme

Figures 1.1 and 1.2 indicate the paradigm employed to classify the subjects. The numerals and/or letters are intended to provide an expeditious means of identifying each classification.[98] In the next several paragraphs the various classifications are defined in more detail.

F/R - The subjects initially assigned to one program or the other.

F1/R1 - The "successful" graduates of the two programs.

An individual[99] who had been granted the Bachelor of Education (B.Ed.) by the University of Hawaii (UH[100] and had completed the part-time--six/eight-semester-hour (SH)[101]--student teaching (ST) practicum prescribed in the Ford program was

---

[95] 317 of the subjects were female.

[96] Or, indeed, the United States Post Office.

[97] In some instances, however, it was possible to only partially classify an individual. The individuals in classification F14 (see Figure 1.1), for example, are known to be "successful" graduates of the Ford program but it is unknown whether or not they are teaching.

[98] For example, R12B identifies that classification which encompasses those "successful" secondary graduates who are currently teaching at some location other than Hawaii.

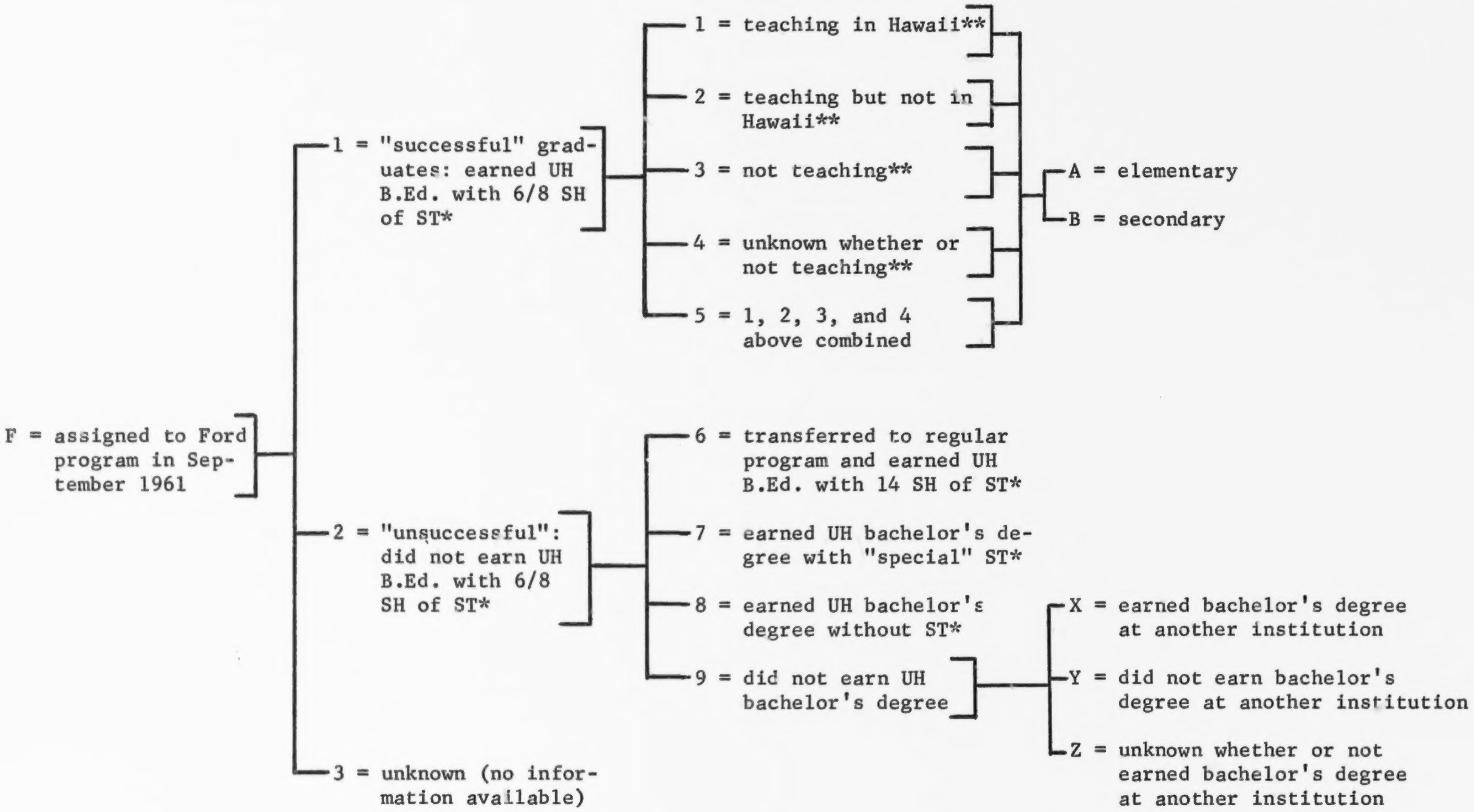
[99] Who had been initially assigned to the Ford program.

[100] As of August 31, 1966.

[101] See "Professional Education--Student Teaching" in Chapter 2.

Figure 1.1

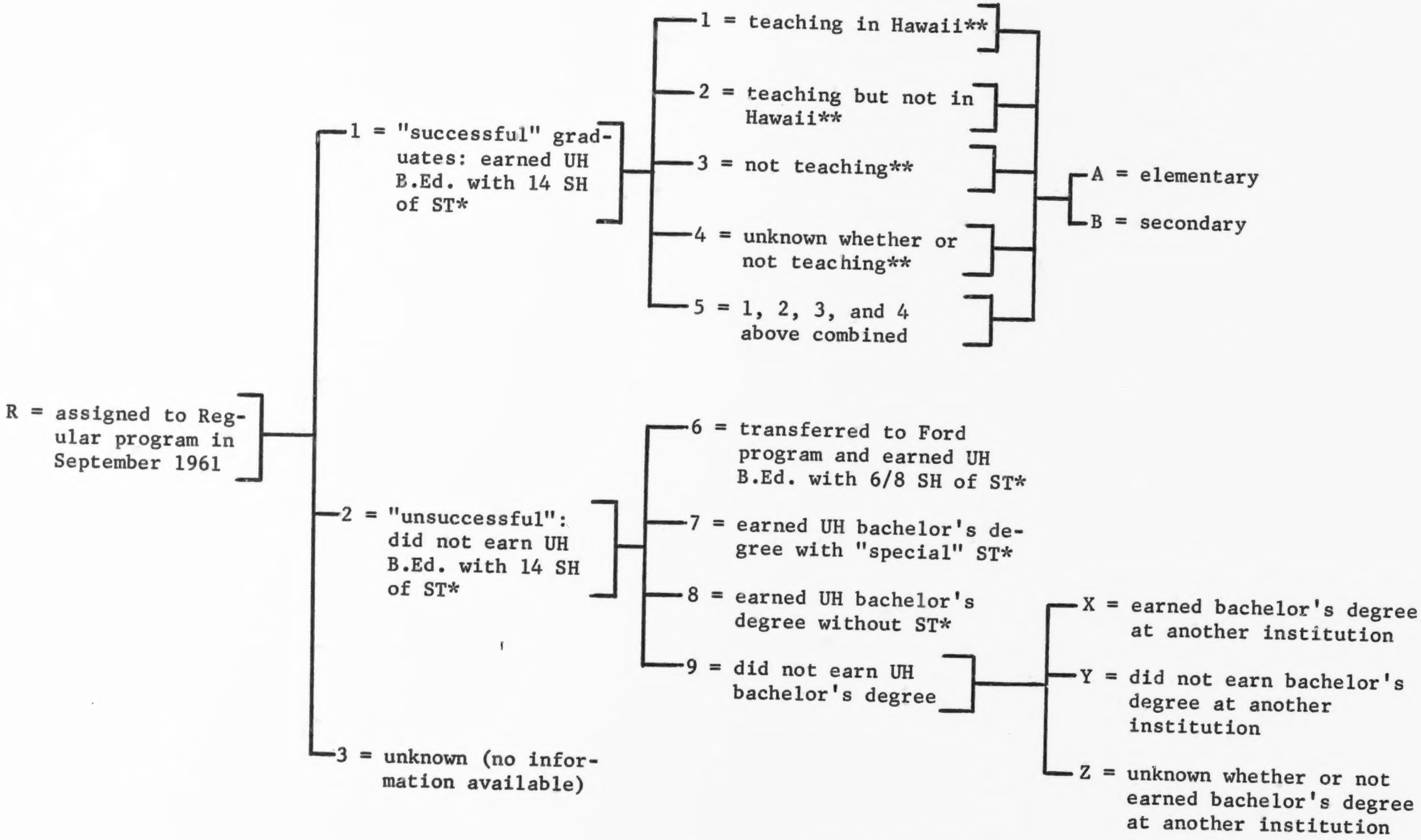
Classification of Individuals Initially Enrolled in the Ford Program


F = assigned to Ford program in September 1961
1 = "successful" graduates: earned UH B.Ed. with 6/8 SH of ST*
2 = "unsuccessful": did not earn UH B.Ed. with 6/8 SH of ST*
3 = unknown (no information available)
1 = teaching in Hawaii**
2 = teaching but not in Hawaii**
3 = not teaching**
4 = unknown whether or not teaching**
5 = 1, 2, 3, and 4 above combined
A = elementary
B = secondary
6 = transferred to regular program and earned UH B.Ed. with 14 SH of ST*
7 = earned UH bachelor's degree with "special" ST*
8 = earned UH bachelor's degree without ST*
9 = did not earn UH bachelor's degree
X = earned bachelor's degree at another institution
Y = did not earn bachelor's degree at another institution
Z = unknown whether or not earned bachelor's degree at another institution

*as of August 31, 1966
**1966-67 school year

Figure 1.2

Classification of Individuals Initially Enrolled in the Regular Program


R = assigned to Regular program in September 1961
1 = "successful" graduates: earned UH B.Ed. with 14 SH of ST*
2 = "unsuccessful": did not earn UH B.Ed. with 14 SH of ST*
3 = unknown (no information available)
1 = teaching in Hawaii**
2 = teaching but not in Hawaii**
3 = not teaching**
4 = unknown whether or not teaching**
5 = 1, 2, 3, and 4 above combined
A = elementary
B = secondary
6 = transferred to Ford program and earned UH B.Ed. with 6/8 SH of ST*
7 = earned UH bachelor's degree with "special" ST*
8 = earned UH bachelor's degree without ST*
9 = did not earn UH bachelor's degree
X = earned bachelor's degree at another institution
Y = did not earn bachelor's degree at another institution
Z = unknown whether or not earned bachelor's degree at another institution

*as of August 31, 1966
**1966-67 school year

designated a "successful" graduate of the Ford Program. An individual[102] who had been granted the Bachelor of Education by the University of Hawaii and had completed the full-time (14-semester-hour) student teaching practicum prescribed in the regular program was designated a "successful" graduate of the regular program.

It can be seen, then, that in this classification scheme only one element distinguishes between the "successful" Ford graduate and the "successful" regular graduate: the character of the student teaching practicum.[103] An analysis of the transcripts[104] of the "successful" graduates of both programs revealed that the most salient and most consistent difference between the two programs[105] was the character of the student teaching practicum and, consequently, it seemed appropriate to use that difference in the classification scheme.

F2/R2 - The subjects who do not meet the criteria to be designated "successful" graduates.[106] An "unsuccessful" individual, then, is one who (1) was not granted the Bachelor of Education by the University of Hawaii and/or (2) did not complete the student teaching practicum prescribed for the program (Ford and regular) to which he was initially assigned. In short, then, an "unsuccessful" subject, is one who did not complete the (undergraduate) program (Ford or regular) to which he was originally assigned.

---

[102] Who had been initially assigned to the regular program.

[103] That is, part-time or full-time.

[104] See "Source of data" in Chapter 2.

[105] It should be noted, however, that there were other major differences between the two programs, such as (1) the relative proportion of courses given to professional and general education in each program, (2) the character of the general education portion of each program, and (3) the character of the professional education portion of each program. These differences are discussed in detail in subsequent chapters.

[106] See F1/R1.

F3-R3 - The subjects on whom no data whatsoever were available.[107]

F11/R11 - The "successful" graduates known to be currently[108] teaching[109] in the Hawaii public school system.[110]

F12/R12 - The "successful" graduates known to be currently teaching but not in Hawaii.[111]

F13/R13 - The "successful" graduates known to be not currently teaching.

F14/R14 - The "successful" graduates on whom no data were available to indicate whether or not they are currently teaching.

F15/R15 - The "successful" graduates of the two programs.[112]

F11A/R11A, F12A/R12A, F13A/R13A, F14A/R14A, and F15A/R15A - The "successful" graduates who, as undergraduates, were elementary students (that is, prospective elementary teachers).[113]

---

[107] It appears that the assignment of the subjects to the two programs (Ford and regular) was accomplished prior (probably during the summer of 1961) to their actual enrollment in the College of Education. There is no evidence that the individuals in the F3/R3 classification ever enrolled in the College of Education or any other school or college in the University of Hawaii.

[108] The term "currently," as used in this section, refers to the 1966-67 school year.

[109] The term "teaching," as employed in this section, includes other educational positions, e.g., school librarian.

[110] See footnote 5 in Chapter 3.

[111] That is, in one of the other 49 states.

[112] F15 and R15 are identical to F1 and R1, respectively. However, this classification was added to provide consistency in the letter-number sequence when it is desired to designate all elementary "successful" graduates (R15A/R15A) and all secondary "successful" graduates (F15B/R15B).

[113] Although, there were various distinctions between the programs prescribed for the (Ford and regular) elementary students and the programs prescribed for the (Ford and regular) secondary students, the student teaching practicum was used to distinguish elementary and secondary students. Thus an elementary student was one who engaged in student teaching at the elementary level and a secondary student was one who engaged in student teaching at the secondary level.

F11B/R11B, F12B/R12B, F13B/R13B, F14B/R14B, and F15B/R15B - The "successful" graduates who, as undergraduates, were secondary students (that is, prospective secondary teachers).[114]

F26/R26 - The subjects who (1) transferred from the program to which they had been initially assigned to the other program[115] and (2) completed the program into which they transferred.[116]

F27/R27 - The subjects (1) who completed neither the program to which they had been initially assigned nor the other program but (2) who completed a "special" student teaching practicum[117] and was granted a bachelor's degree by the University of Hawaii.[118]

F28/R28 - The subjects (1) who completed neither the program to which they had been initially assigned nor the other program but (2) who transferred to another college in the University of Hawaii and were granted a bachelor's degree (without completing a student teaching practicum[119]).

---

[114] See footnote 113.

[115] It was virtually impossible for an individual who had been initially assigned to the regular program to transfer to the Ford program and none did. The R26 classification is included only to make the two classification schemes (Figures 1.1 and 1.2) parallel.

[116] Although these individuals were granted the Bachelor of Education by the University of Hawaii, they did not complete the student teaching practicum prescribed for the program (Ford or regular) to which they were originally assigned and therefore, they are classified as "unsuccessful."

[117] A "special" student teaching practicum is one unlike both that prescribed for the Ford program and that prescribed for the regular program. The prospective home economics teachers, for example, engaged in a "special" student teaching practicum.

[118] Although these individuals were granted the bachelor's degree by the University of Hawaii, they did not complete the student teaching practicum prescribed for the program (Ford and regular) to which they were originally assigned and, therefore, they are classified as "unsuccessful."

F29/R29 - The subjects who were not granted a bachelor's degree by the University of Hawaii.

F29X/R29X - The subjects who were not granted a bachelor's degree by the University of Hawaii but who were awarded a baccalaureate by another institution.[120]

F29Y/R29Y - The subjects who were not granted a bachelor's degree by the University of Hawaii and who have not been awarded a baccalaureate by another institution.[121]

F29Z/R29Z - The subjects who were not granted a bachelor's degree by the University of Hawaii and for whom there are no available data to indicate whether or not they have been awarded a baccalaureate by another institution.

The Ns of the various classifications

The number of individuals in each classification is indicated in Table 1.2.

---

[119] Since the completion of an appropriate student teaching practicum is required for teacher certification in Hawaii, these individuals are not eligible to teach in the Hawaii public school system.

[120] It appears that some of these individuals completed programs that would enable them to meet (Hawaii) teacher certification requirements but others did not.

[121] As of August 31, 1966.

Table 1.2

Number of Subjects by Program and by Classification*

Ford Program (N=165)		Regular Program (N=165)	
Classification	N	Classification	N
F	165	R	165
F1	96	R1	93
F2	67	R2	69
F3	2	R3	3
F11	45	R11	44
F12	15	R12	10
F13	25	R13	31
F14	11	R14	8
F15	96	R15	93
F11A	39	R11A	36
F12A	13	R12A	8
F13A	20	R13A	18
F14A	7	R14A	6
F15A	79	R15A	68
F11B	6	R11B	8
F12B	2	R12B	2
F13B	5	R13B	13
F14B	4	R14B	2
F15B	17	R15B	25
F26	6	R26	0
F27	0	R27	4
F28	12	R28	14
F29	49	R29	51
F29X	5	R29X	9
F29Y	32	R29Y	29
F29Z	12	R29Z	13

*See "The classification scheme" and Figures 1.1 and 1.2

An examination of Table 1.2 reveals that the number of subjects from each group (Ford and regular) in parallel classifications[122] are generally comparable and, indeed, in the more encompassing classifications,[123] the differences are almost negligible. The 96 "successful" graduates of the Ford program, for example, compare with the 93 "successful" graduates of the regular program. Similarly, the number of former Ford students who were not granted a bachelor's degree by the University of Hawaii[124]--49--is comparable to the number of former regular students in the parallel classification[125]--51. By the same token, the 44 regular graduates known to be employed in the Hawaii public school system[126] compares closely to the 45 Ford graduates who are doing likewise.[127]

Project A in Perspective

In 1959, the College of Education initiated a proposal to the Fund for the Advancement of Education which called for "bold experimentation in educational procedures" and solicited funding for several projects designed to contribute to the "improvement of education in Hawaii." The Fund responded favorably.

One of the projects entailed the formulation of an "experimental" teacher education program. The design of this prototype curriculum would, hopefully, be one which would eliminate, or at least minimize, weaknesses believed to exist in both the general (liberal) education and the professional education programs for prospective teachers.

---

[122] For example, F1 and R1 or F29Z and R29Z.

[123] For example, F1/R1, F2/R2, F29/R29.

[124] F29.

[125] R29.

[126] R11.

[127] F11.

The "Ford" program that evolved represented the best thinking of two groups of professors--a Liberal Arts Committee and a Professional Education Committee.

In the fall of 1961, 330 students enrolled in the College of Education--half of them embarked on the newly devised Ford program; the other half pursued the established (regular) program. As of the fall of 1966 when this study was initiated, almost 189 of these individuals had successfully completed the (undergraduate) program which they had entered five years earlier. A number of them, at least 89, had recently assumed positions in the Hawaii public school system.

The task, then, was to accumulate and examine data pertaining to these "successful" graduates, data from the past--acquired by perusing transcripts, student and intern teaching evaluation forms, examination scores and so forth--and, equally important, data from the present--gathered by engaging in classroom observations and administering instruments designed to yield information about teachers' attitudes, opinions, educational viewpoints, and the like.

The findings are reported in the following pages.

CHAPTER 2

UNDERGRADUATE PROGRAMS

Introduction

Major program differences

The major differences between the Ford and regular teacher education programs tend to fall in three general categories: (1) the relative proportion of courses given to professional and general education,[1] (2) the character of the general education portion of each program, and (3) the character of the professional education portion of each program.

In this chapter, the data relating to each of these three areas will assist the reader to better visualize the similarities and differences between the programs. In addition, the extent to which students from each group conformed to program requirements in terms of semester hours and quality of their performance from the standpoint of grade points will be reported.

Source of data

All data on semester hours and grade points reported herein were extracted from the official transcript of each "successful" graduate.[2]

Since it was impossible to locate official transcripts for three of the 96 Ford graduates and for one of the 93 regular graduates, the data presented in this chapter are based on analyses of the transcripts of 185[3] of the 189 "successful" graduates of the two programs.

---

[1] "Professional education," as employed in this discussion, refers to all courses (including student teaching) offered by the College of Education (excluding the Department of Health and Physical Education). "General education," then, includes all courses offered by the University of Hawaii except those designated "professional education" according to the above definition.

[2] A "'successful' graduate" was defined in the preceding chapter. In brief, it is a graduate (1) who completed the student teaching practicum prescribed for the program (Ford or regular) to which he was originally assigned and (2) who was granted the Bachelor of Education degree prior to August 31, 1966.

Comparison in terms of stratification variables

The two primary groups (Ford and regular) on which the data in this chapter are based were compared in terms of the six stratification variables.[4] The chi square[5] data in Table 2.1 reveal that the groups do not differ significantly on any of the stratification variables.

Table 2.1

Distribution of Two Groups of Students on Six Stratification Variables

		Category												
Variable	Group	A	B	C	D	E	F	G	H	I	J	Z	Chi Square	p
OP	F15	2	7	14	12	20	17	17	4	0	0		1.01	.99 < .98
	R15	0	8	12	19	22	14	14	3	0	0			
CS	F15	71	9	9	0	1						3	1.04	.70 < .50
	R15	56	21	13	1	0						1		
SS	F15	6	13	16	14	44							1.02	.95 < .90
	R15	5	11	14	23	39								
LS	F15	86	7										.08	.80 < .70
	R15	83	9											
TS	F15	81	12										.04	.90 < .80
	R15	80	12											
S	F15	0	93										2.33	.20 < .10
	R15	4	88											

---

[3] All data reported in this chapter, then, are based on the following Ns:

F15A=76	R15A=68
F15B=17	R15B=24
F15 =93	R15 =92

[4] The stratification variables and categories are described in detail in the preceding chapter.

[5] The procedures employed in the computation of chi square are described in the appendix.

Semester hours and grade points

Since the terms "semester hour" and "grade points" are employed extensively in this chapter, the following definitions[6] are provided:

> A . . . semester hour . . . is given to a student for work satisfactorily accomplished during three hours a week spent in the preparation and recitation of assignments in a course, or in the field or laboratory.
>
> Grade points . . . are computed as follows: for each credit received in a course, 4 grade points are granted if the grade is A, 3 if B, 2 if C, 1 if D . . .

It should be noted that all data on semester hours and grade points reported in this chapter are based on courses successfully completed, that is, courses for which the students received grades of A, B, C, or D.[7]

General Education--Communication and Language Courses[8]

Ford program emphasis on communication and language

As indicated in the preceding chapter, the signal aspect of the general education program devised for the Ford students by the Liberal Arts Committee was its focus on communication and language. It will be recalled that the theme of the proposed program centered on the various "languages" through which man communicates, i.e., verbal language, including both English and foreign language, the language of mathematics, and the language of the arts, particularly art and music. Thus, each student in the Ford group was expected to study each of three major "language systems" in each of six semesters--the English language, a foreign language, and mathematics--as well as complete a series of courses in the arts (art and music).

---

[6] University of Hawaii Bulletin, 45:26-27, May, 1966.

[7] The instances in which a student received the grade of F and failed to make it up by subsequently passing the course are extremely few.

[8] For the purpose of this discussion, general education is partitioned into: (1) "communication and language courses" and (2) "other courses."

In terms of comparison, a crucial question is: how much difference was there in fact between the two programs (Ford and regular) in terms of the amount of course work completed in the communication and language areas? A corollary question concerns the relative quality of the performance of the two groups in these courses.

English

The Ford program prescribed 18 semester hours of English whereas the regular program required 12 semester hours. Ordinarily, English courses would be courses offered by the English Department of the College of Arts and Sciences. In this discussion, however, the following courses are also considered "English" courses even though offered by the Anthropology Department and the Speech Department respectively:

> Anthropology 202 - Introduction to Linguistics
> The nature and workings of language, and its role in culture and history.[9]
>
> Speech 440 - Semantics
> Language in understanding; verbal meaning and implication; the role of assumption in interrelationships. Use of language for clarity, accuracy, and evaluation.[10]

These courses are considered "English" courses since College of Education students were permitted to apply either or both of them toward their English requirements. Each course yields three semester hours of credit.

Table 2.2 indicates the distribution of the students in groups F15A, F15B,

---

[9] University of Hawaii Bulletin, 42:49, April, 1963.

[10] University of Hawaii Bulletin, 42:127, April, 1963.

F15,[11] R15A, R15B, and R15[11] according to number of semester hours in English completed. The average grade point of the students within each classification is also indicated.

Table 2.2

Distribution of Six Groups of Students by Number of Semester Hours of English Completed and Average Grade Point

	Group											
Semester Hours of English	F15A		F15B		F15		R15A		R15B		R15	
	N	AGP	N	AGP	N	AGP	N	AGP	N	AGP	N	AGP
0-8							1	2.0			1	2.0
9-11									1	2.3	1	2.3
12-14							63	2.2	13	2.3	76	2.2
15-17	3	2.4			3	2.4	4	2.6	1	2.0	5	2.4
18-20	42	2.4	9	2.4	51	2.4			2	2.7	2	2.7
21-23	22	2.4	1	2.7	23	2.4						
24 or more	9	2.6	7	2.7	16	2.7			7	2.9	7	2.9

It can be seen that the Ford students completed from 15 to 24 or more semester hours of English with the majority in the 18-20-semester-hour category. The range for the regular students was broader--from eight or less to 24 or more semester hours--with the majority in the 12-14-semester-hour category.

---

[11] It will be recalled that F15 is inclusive in that it incorporates both Ford elementary students and Ford secondary students in a single group. By the same token, R15 incoporates both regular elementary and regular secondary students in one group. In general, it is probably more meaningful to consider elementary and secondary students separately. However, data pertaining to the F15 and R15 groups are included for the benefit of the reader who prefers to view each group (Ford and regular) as a whole.

As might be expected, the average grade point of the students who completed 24 or more semester hours of English is somewhat higher than that of the students who completed 23 or less semester hours. It is assumed (the records are neither complete nor precise in this respect) that the students who completed 24 or more semester hours are those who elected English as their "teaching major" (secondary) or "academic minor" (elementary).

Table 2.3 indicates the average number of semester hours in English completed and the average grade point for each of the six groups of students.

Table 2.3

Average Number of Semester Hours of English Completed
and Average Grade Point of Students from Each of Six Groups

	Group					
	F15A	F15B	F15	R15A	R15B	R15
ASH	20.4	24.6	21.2	12.1	19.3	14.0
AGP	2.4	2.7	2.5	2.2	2.6	2.4

The average Ford student completed 21.2 semester hours of English and earned a grade point of 2.5 whereas the average regular student completed 14.0 semester hours and maintained a grade point of 2.4. The averages are somewhat distorted by the fact that 16 of the Ford students earned 24 or more semester hours of English as compared to only seven of the regular students.

If the elementary and secondary students are viewed separately, it can be observed that the Ford elementary students, on the average, completed 8.3 more semester hours of English than their regular counterparts. The Ford secondary teachers earned 5.3 more semester hours of English, on the average, than their regular counterparts. The average grade points of both the Ford elementary and the Ford secondary students are slightly above those of their regular peers.

Finally, Table 2.4 indicates the percentage of students from each of the six groups completing 12 or more and 18 or more semester hours of English.

Table 2.4

Percentage of Students from Each of Six Groups
Completing a Specified Number of Semester Hours of English*

Semester Hours of English	Group					
	F15A	F15B	F15	R15A	R15B	R15
12 or more	100.0%	100.0%	100.0%	98.6%	95.8%	97.8%
18 or more	96.1%	100.0%	96.8%	0%	37.5%	9.8%

*The number of students from each group completing the specified number of semester hours of English can be obtained from Table 2.2.

It can be seen that 100 per cent of the Ford students and 97.8 per cent of the regular students earned 12 or more semester hours of English (12 semester hours was the prescribed program for the regular students). However, only 9.8 per center of the regular students earned 18 or more semester hours of English--the number prescribed for the Ford program--as compared to 96.8 per cent of the Ford students.

In summary, then, it can be said that by and large both the regular students and the Ford students completed the prescribed number of semester hours of English for their respective programs. It seems likely, too, that the higher English requirement for the Ford program had the effect of encouraging more students to elect English as a teaching major (secondary) or an academic minor (elementary).

There was a definite difference between the two programs in terms of the average number of semester hours of English completed.[12] A crucial question, of course, is whether or not the difference is reflected in the classroom performance of these prospective teachers.

---

[12] 7.2 semester hours.

Mathematics

Since mathematics represented one of the three major "language systems" in the general education program formulated by the Liberal Arts Committee, 18 semester hours of mathematics were prescribed for the Ford students. The regular curriculum, in contrast, entailed only three semester hours of mathematics.

An examination of Table 2.5 reveals that while the regular students completed from 3 to 24 or more semester hours of mathematics, the vast majority (over four-fifths) is in the 3-5-semester-hour category. The Ford students also range from 3 to 24 or more semester hours of mathematics completed but they are somewhat more evenly distributed across the various categories.

Table 2.5

Distribution of Six Groups of Students by Number of Semester Hours of Mathematics Completed and Average Grade Point

	Group											
Semester Hours of Mathematics	F15A		F15B		F15		R15A		R15B		R15	
	N	AGP	N	AGP	N	AGP	N	AGP	N	AGP	N	AGP
0-2												
3-5	12	2.1	2	1.0	14	1.9	63	2.6	13	2.6	76	2.6
6-8	17	1.9	4	2.1	21	1.9	3	3.5	2	2.0	5	2.9
9-11	8	2.2	1	2.0	9	2.1	2	2.5	2	2.3	4	2.4
12-14	5	1.9	2	2.3	7	2.0			2	2.3	2	2.3
15-17	9	2.1	1	2.2	10	2.1			1	2.8	1	2.8
18-20	18	2.5	2	2.6	20	2.5						
21-23	1	3.1			1	3.1						
24 or more	6	2.6	5	2.9	11	2.8			4	2.9	4	2.9

The Ford students completed, on the average, 12.6 semester hours of mathematics and earned a grade point of 2.4 whereas the regular students, on the average, completed 4.9 semester hours of mathematics and maintained a grade point of 2.7.

Table 2.6

Average Number of Semester Hours of Mathematics Completed and Average Grade Point of Students From Each of Six Groups

	Group					
	F15A	F15B	F15	R15A	R15B	R15
ASH	11.8	15.9	12.6	3.3	9.5	4.9
AGP	2.3	2.6	2.4	2.7	2.7	2.7

Although the difference between the Ford students and the regular students in terms of average number of semester hours of mathematics completed is substantial,[13] the difference between the average Ford elementary and secondary student[14] is only slightly less than the difference between the average regular elementary and secondary student[15]. Again, however, the averages are somewhat distorted by the fact that 11 of the Ford students apparently elected mathematics as their teaching major (secondary) or academic minor (elementary) whereas only four of the regular group completed 24 or more semester hours of mathematics.

Table 2.7 indicates that 100 per cent of both the Ford students and the regular students completed three or more semester hours of mathematics (three semester hours was the requirement for the regular program). However, only 34.4 per cent of the Ford students completed the 18 semester hours of mathematics prescribed for the Ford program.[16] It appears that the Ford students experienced considerable difficulty in coping with the courses in the mathematics sequence.

---

[13] 7.7 semester hours.

[14] 4.1 semester hours.

[15] 6.2 semester hours.

Table 2.7

Percentage of Students from Each of Six Groups
Completing a Specified Number of Semester Hours of Mathematics*

Semester Hours of English	Group					
	F15A	F15B	F15	R15A	R15B	R15
3 or more	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
18 or more	32.9%	41.2%	34.4%	0%	16.7%	4.3%

*The number of students from each group completing the specified number of semester hours of mathematics can be obtained from Table 2.5.

In summary, then, all of the regular students completed their prescribed mathematics requirement of three semester hours. In contrast, less than one-third of the Ford students completed their prescribed mathematics requirement of 18 semester hours (although every Ford student completed a minimum of three semester hours of mathematics). The average grade point of the regular students was slightly higher than that of their Ford counterparts.

Again, the heavier mathematics requirement of the Ford program seemed to have the effect of encouraging proportionately more of the Ford students (than regular students) to elect mathematics as a teaching major or academic minor.

---

[16] In comparison, only 4.3 per cent of the regular students completed 18 or more semester hours of mathematics.

Foreign language

The third of the major "language systems" in the general education program of the Ford students was foreign language. The Ford program prescribed 18 semester hours of foreign language. The regular curriculum, in sharp contrast, required no foreign language whatsoever.

Table 2.8 reveals that all but three of the Ford students completed 12 or more semester hours of foreign language. The same claim can be made for only 16 of the regular students.

Table 2.8

Distribution of Six Groups of Students by Number of Semester Hours of Foreign Language Completed and Average Grade Point

Semester Hours of Foreign Language	Group											
	F15A		F15B		F15		R15A		R15B		R15	
	N	AGP	N	AGP	N	AGP	N	AGP	N	AGP	N	AGP
0							53		13		66	
1-5							1	2.0			1	2.0
6-8			1	2.0	1	2.0	6	3.1	2	3.0	8	3.1
9-11	2	2.0			2	2.0			1	3.3	1	3.3
12-14	11	2.5	4	2.1	15	2.4	3	3.0	4	2.6	7	2.8
15-17	8	2.2	2	3.6	10	2.4	2	2.9	2	3.0	4	3.0
18-20	30	2.6	4	2.4	34	2.6	1	3.3	1	2.9	2	3.1
21-23	6	2.7	2	2.5	8	2.7	2	3.2			2	3.2
24 or more	19	3.3	4	3.3	23	3.3			1	2.7	1	2.7

A review of Table 2.9 indicates that the Ford students completed an average of 19.8 semester hours of foreign language and maintained an average grade point of 2.8 while the regular students, on the average, completed only 3.6 semester hours of foreign language and earned a grade point of 2.9.

Table 2.9

Average Number of Semester Hours of Foreign Language Completed and Average Grade Point of Students from Each of Six Groups

	Group					
	F15A	F15B	F15	R15A	R15B	R15
ASH	19.9	19.2	19.8	2.5	7.9	3.6
AGP	2.8	2.8	2.8	3.1	2.5	2.9

Again, however, the relative number of students who elected foreign language as their teaching major or academic minor tends to distort the group averages. It can be observed that 23 of the Ford students completed 24 or more semester hours of foreign language. This number stands in sharp contrast to the lone regular student who apparently elected foreign language as his teaching major.

It can be seen in Table 2.10 that less than one-third of the regular students completed one or more semester hours of foreign language. Although all the Ford students earned a minimum of six semester hours of foreign language, only two-thirds of them completed the prescribed 18 semester hours. In contrast, however, only one-twentieth of the regular students completed 18 or more semester hours of foreign language.

Table 2.10

Percentage of Students from Each of Six Groups Completing a Specified Number of Semester Hours of Foreign Language *

	Group					
Semester Hours of Foreign Language	F15A	F15B	F15	R15A	R15B	R15
1 or more	100.0%	100.0%	100.0%	22.1%	45.8%	28.3%
18 or more	72.4%	58.9%	69.9%	4.4%	8.4%	5.4%

*The number of students from each group completing the specified number of semester hours of foreign language can be obtained from Table 2.8.

Table 2.11 indicates the language (or combination of languages) elected by the students who completed one or more foreign language courses. The most striking element in the table is that over one-half of the Ford students and almost two-thirds of the regular students[17] limited their choice to a single foreign language: Japanese.

The relative popularity of the Asian languages is pronounced--almost two-thirds of the Ford students and over two-thirds of the regular students elected Asian languages exclusively. In contrast, less than one-third of the Ford students and less than one-fifth of the regular students elected European languages exclusively.

Since an overwhelming majority of College of Education students are of Asian ancestry, the apparent popularity of Asian languages is not particularly surprising. The question might be raised, however, as to whether or not the objectives that the Liberal Arts Committee visualized[18] when it recommended 18 semester hours of foreign language were indeed accomplished. It appears that in many instances students elected the language of their own ethnic/cultural background. The obvious question, then, concerns the extent to which insight into " . . . a new medium of communication and a new culture pattern" was indeed realized.

---

[17] That is, two-thirds of those regular students who completed one or more foreign language courses.

[18] The Liberal Arts Committee report states that the " . . . study of a foreign language . . . provides a new experience, progressively enlarging the pupil's horizon through the introduction to a new medium of communication and a new culture pattern . . . "

Table 2.11

Distribution of Six Groups of Students Who Completed One or More Courses in Foreign Language by Language (or Combination of Languages)

	Group					
Language(s)	F15A	F15B	F15	R15A	R15B	R15
Chinese	2		2	1		1
Chinese/French	3		3			
Chinese/Japanese		2	2			
Chinese/Russian		1	1			
French	17	4	21	1	2	3
French/Japanese	3	1	4		1	1
French/Japanese/ Spanish					1	1
French/Latin		1	1			
French/Spanish	2		2			
German	1		1			
German/Japanese		1	1			
Japanese	43	6	49	12	5	17
Japanese/Latin					1	1
Japanese/Spanish		1	1			
Spanish	5		5	1	1	2

2

In summary, then, since there was no foreign language requirement for the regular students, less than one-third of them completed any foreign language courses and only one-twentieth of them completed 18 or more semester hours of foreign language. Slightly over two-thirds of the Ford students completed the 18 semester hours of foreign language prescribed for their program (no Ford student completed less than six semester hours of foreign language).

The area of foreign language is the most pronounced instance in which the heavier requirement of the general education program seems to have the effect of encouraging more of the Ford students to elect foreign language as their teaching major or academic minor as compared to the regular students. The ratio in this instance is 23:1.

Finally, the fact that a substantial majority of the Ford students elected a single foreign language, Japanese, and the fact that a majority[19] of the College of Education students are from a Japanese ethnic/cultural background,[20] raises a question as to whether or not the objectives envisioned by the Liberal Arts Committee were indeed attained.[21]

---

[19] There is no adequate procedure for determining precisely how many of the students in this study are of Japanese ethnic/cultural background. However, other studies of College of Education students have consistently revealed that the majority are of Japanese ethnic/cultural background. There is no reason to believe that the students in this study differ significantly from the typical College of Education population in this respect.

[20] It does not necessarily follow, of course, that because a student is of Japanese ancestry he is steeped in Japanese language and culture. However, the level of interest in Japanese culture and language on the part of the Japanese community in Hawaii seems to be high. This is evidenced by such things as the number of Japanese language newspapers, periodicals, radio programs, television productions, and motion picture theaters; by the scope of Japanese religious, social, and cultural organizations and activities; and by the apparent popularity of the Japanese language schools which service about 10,000 children annually (not all of whom are of Japanese ancestry).

Art

Another of the languages through which man communicates, according to the rationale developed by the Liberal Arts Committee, is art. The Ford program prescribed six semester hours of art for all students. The regular program, in comparison, required four semester hours of art for elementary students but none for secondary students.

The Ford students completed from 4 to 24 or more semester hours of art with the majority in the 6-8-semester-hour category in Table 2.12. The regular elementary students completed from less than 3 to 24 or more semester hours of art with the majority in the 4-5-semester-hour category. The regular secondary students all completed less than three semester hours of art with the exception of two individuals who apparently elected art as their teaching major.

---

[21] It might be argued that by engaging in further study of Japanese language and culture as an undergraduate, the prospective teacher would be better able to take full personal and professional advantage of the various Japanese social, cultural, and educational activities in the community. In any event, the purpose of this discussion is merely to raise a question, not to argue it or to assume a position on it.

Table 2.12

Distribution of Six Groups of Students by Number of Semester Hours of Art Completed and Average Grade Point

Semester Hours of Art	F15A N	F15A AGP	F15B N	F15B AGP	F15 N	F15 AGP	R15A N	R15A AGP	R15B N	R15B AGP	R15 N	R15 AGP
0-3							13	3.1	22	2.8	35	3.1
4-5	1	2.4	1	2.6	2	2.5	43	2.7			43	2.7
6-8	68	2.6	15	2.9	83	2.6	5	2.5			5	2.5
9-11	2	3.0			2	3.0	1	3.0			1	3.0
12-23	1	3.1	1	2.8	2	3.0	5	2.8			5	2.8
24 or more	4	3.0			4	3.0	1	3.4	2	3.0	3	3.1

Table 2.13 indicates that the average Ford student completed 7.5 semester hours of art and earned a grade point of 2.7. The average regular student, in comparison, completed 4.8 semester hours of art and maintained a grade point of 2.8.

Table 2.13

Average Number of Semester Hours of Art Completed and Average Grade Point of Students from Each of Six Groups

	F15A	F15B	F15	R15A	R15B	R15
ASH	7.7	6.6	7.5	5.1	3.8	4.8
AGP	2.7	2.9	2.7	2.8	3.0	2.8

It can be seen in Table 2.14 that four-fifths of the regular elementary students completed their four-semester hour art requirement. Less than one-tenth of the regular secondary students (who had no art requirement) completed four or more semester hours of art. In contrast, every Ford student (both elementary and secondary) completed four or more semester hours of art.

Table 2.14

Percentage of Students from Each of Six Groups Completing a Specified Number of Semester Hours of Art*

Semester Hours of Art	F15A	F15B	F15	R15A	R15B	R15
4 or more	100.0%	100.0%	100.0%	80.9%	8.3%	62.0%
6 or more	98.7%	94.1%	97.8%	17.6%	8.3%	22.6%

*The number of students from each group completing the specified number of semester hours of art can be obtained from Table 2.12.

Virtually all (97.8 per cent) of the Ford students completed their six-semester hour art requirement. In comparison, less than one-quarter of the regular students completed six or more semester hours of art.

The impact of heavier program requirements on choice of teaching major or academic minor did not seem to be as marked in the case of art. Four of the Ford students completed 24 or more semester hours of art as did three of the regular students.

In summary, then, virtually all of the Ford students (elementary and secondary) completed the six-semester-hour art requirement of their program while four-fifths of the elementary students completed the four-semester-hour art requirement of their program. The available records do not yield any clues to explain the failure of one-fifth of the regular elementary students to complete their art requirement. The regular secondary students had no art requirement in their general education program.

Music

The general education program for the Ford students included four semester hours of "music activity" courses. The regular program prescribed seven semester hours of music for elementary students. There was no music requirement for regular secondary students.

The seven-semester-hour music requirement for regular elementary students included Music 251-252[22], a sequence of two two-semester-hour courses (a total of four semester hours). However, a number of the regular elementary students substituted a three-semester-hour music course, Music 253[23], which the catalog described as a " . . . combination of 251-252."[24] As a consequence of this course substitution about one-half of the regular elementary students failed to complete seven semester hours of music. However, most of them completed a six-semester-hour sequence which was in a sense equivalent to the seven semester hours of music prescribed in their program.

A review of Table 2.15 reveals that the Ford students completed from less than three to 24 or more semester hours of music with the vast majority in the 4-6-semester-hour category. The bulk of the regular elementary students are in the 4-6 and 7-9-semester-hour categories while none of the regular secondary students completed more than three semester hours of music.

---

[22] "Music, Elementary Curriculum."

[23] "Music, Elementary Curriculum" was originally developed for the Auxiliary Teaching Training Program which was later designated the Classified Professional Certificate program. These programs were designed for college graduates who elected to enter education at the post-graduate level.

[24] University of Hawaii Bulletin, 42:103; April, 1963.

Table 2.15

Distribution of Six Groups of Students by Number of Semester Hours of Music Completed and Average Grade Point

Semester Hours of Music	F15A N	F15A AGP	F15B N	F15B AGP	F15 N	F15 AGP	R15A N	R15A AGP	R15B N	R15B AGP	R15 N	R15 AGP
0-3	3	2.0			3	2.0			24	3.8	24	3.8
4-6	61	3.0	16	3.4	77	3.0	33	2.4			33	2.4
7-9	1	2.8			1	2.8	30	2.6			30	2.6
10-11			1	4.0	1	4.0	1	3.5			1	3.5
12-23	2	2.9			2	2.9	3	3.5			3	3.5
24 or more	9	3.3			9	3.3	1	3.1			1	3.1

It appears that nine of the Ford elementary students elected music as their academic minor while only one of their regular counterparts completed 24 or more semester hours of music. Apparently none of the secondary students (Ford and regular) elected music as a teaching major.

Table 2.16 reveals that the average Ford student completed 6.8 semester hours of music as compared to the average regular student's 5.8 semester hours. These averages are distorted somewhat by (1) the fact that the music requirements were not the same for regular elementary and regular secondary students and (2) the relatively large number of Ford elementary students who elected music as their academic minor.

Virtually all of the Ford students (96.8 per cent) completed the prescribed four semester hours of music in their program. In comparison, none of the regular secondary students completed four or more semester hours of music but all of the regular elementary students did.

Table 2.16

Average Number of Semester Hours of Music Completed
and Average Grade Point of Students from Each of Six Groups

	Group					
	F15A	F15B	F15	R15A	R15B	R15
ASH	7.3	4.5	6.8	7.8	.2	5.8
AGP	3.0	3.5	3.1	2.7	3.8	2.7

As indicated previously, only one-half of the regular elementary students completed the seven semester hours of music prescribed in their program. In comparison, however, less than one-fifth of the Ford elementary students completed seven or more semester hours of music.

Table 2.17

Percentage of Students from Each of Six Groups
Completing a Specified Number of Semester Hours of Music*

Semester Hours of Music	Group					
	F15A	F15B	F15	R15A	R15B	R15
4 or more	96.1%	100.0%	96.8%	100.0%	0.0%	73.9%
7 or more	15.8%	5.9%	14.0%	51.5%	0.0%	38.0%

*The number of students from each group completing the specified number of semester hours of music can be obtained from Table 2.15.

In summary, then, the vast majority of the Ford students (both elementary and secondary) completed the four semester hours of music prescribed in their program. Although a number of the regular elementary students failed to complete their seven-semester-hour music requirement, most of them completed their music sequence through course substitution. There was no music requirement in the program of the regular secondary students and few of them enrolled in music courses.

A proportionately large number (nine) of the Ford elementary students elected music as their academic minor while only one regular elementary student did likewise.

General Education--Other Courses

All general education courses other than the communication and language courses discussed in the preceding section are, for the purpose of this discussion, considered "other" general education courses.[25] The number of semester hours of other general education courses completed by the Ford and regular students is indicated in Table 2.18 in the next section.

General Education--Total Program

Table 2.18 indicates the total number of semester hours of general education[26] completed by an average student from each group.

---

[25] See footnote 8.

[26] That is, the number of semester hours of communication and language courses plus the number of semester hours of other general education courses. See footnote 8.

Table 2.18

Semester Hours of General Education Completed by An Average Student from Each of Six Groups

Semester Hours of General Education	Group F15A	 F15B	 F15	 R15A	 R15B	 R15
SH of Communication and Language Courses*	67.1	70.8	67.9	30.8	40.7	33.1
SH of Other General Education Courses	46.3	49.8	46.9	56.9	67.4	59.9
Total SH of General Education Courses	113.4	120.6	114.8	87.7	108.1	93.0

*English, mathematics, foreign language, art, and music. Tables 2.3, 2.6, 2.9, 2.13, and 2.16, respectively, indicate for each discipline the number of semester hours completed by an average student from each of the six groups.

The average Ford student completed 67.9 semester hours of communication and language courses and 46.9 semester hours of other general education courses--a total of 114.8 semester hours of general education. In contrast, the average regular student completed 33.1 semester hours of communication and language courses and 59.9 semester hours of other general education courses, for a total of 93.0 semester hours of general education.

In communication and language courses as well as in other general education courses there is a rather marked difference between the average regular elementary student and the average regular secondary student[27] in contrast to a relatively small difference between the Ford elementary student and Ford secondary student.[28]

---

[27] 9.9 semester hours of communication and language courses; 10.5 semester hours of other general education courses.

[28] 3.7 semester hours of communication and language courses; 3.5 semester hours of other general education courses.

It can be seen, too, that although the average regular students (elementary and secondary) completed more semester hours of other general education courses than did the average Ford students, the converse was true in the case of communication and language courses.

In terms of total semester hours of general education completed, the Ford students (both elementary and secondary) outstriped their regular peers. The difference between the average Ford secondary student and the average regular secondary student, however, is considerably less (12.5 semester hours) than the difference between the Ford and regular elementary students (25.7 semester hours).

In summary, then, it can be said that the general education program completed by the Ford elementary student was not too unlike that completed by the Ford secondary student. In contrast, there is a marked difference in number of semester hours of general education completed by the average regular elementary student as compared to the average regular secondary student.

Although the regular students, on the average, completed more semester hours of other general education courses, the total number of semester hours given to general education courses is greater for the Ford students (both elementary and secondary).

Professional Education--Student Teaching[29]

It was indicated in the preceding chapter that one of the most consistent and salient distinctions between the Ford and regular programs was the student teaching practicum. The Professional Education Committee prescribed a program in which the Ford students would engage in a six-semester-hour part-time[30] student teaching experience over one semester. In contrast, the regular program provided for a full-time[31] one-semester student teaching practicum which afforded 14 semester hours of credit.

---

[29] For the purpose of this discussion, professional education is partitioned into: (1) "student teaching" and (2) "education courses."

Table 2.19 indicates the distribution of the Ford and regular students by number of semester hours earned for student teaching. The average grade point of the students within each classification is also indicated.

Table 2.19

Distribution of Six Groups of Students by Number of Semester Hours of Student Teaching Completed and Average Grade Point

Semester Hours of Student Teaching	Group											
	F15A		F15B		F15		R15A		R15B		R15	
	N	AGP	N	AGP	N	AGP	N	AGP	N	AGP	N	AGP
6	73	2.8	17	3.4	90	2.9						
8	3	2.3			3	2.3						
14							68	3.0	24	3.2	92	3.1

The reader will observe that three of the Ford elementary students were granted eight semester hours of credit for student teaching rather than the six semester hours originally prescribed by the Professional Education Committee. These three individuals did not complete student teaching until the second semester of the 1965-66 academic year,[32] the second year of the Ford program's existence. It was at this time that the College of Education revised the Ford program to the extent of affording eight semester hours of credit for the elementary student teaching practicum. It is reported that the increase was made to enable graduates of the Ford program to meet the certification requirements of one of the states where a number of College of Education graduates seek teaching positions.

---

[30] At the same time, Ford students were to be enrolled in other professional education courses related to the student teaching practicum.

[31] Student teaching plus a two-semester-hour seminar ordinarily represented the entire semester's program of a regular student.

The Ford students completed an average of 6.0 semester hours of student teaching and earned an average grade point of 2.9. The regular students, in contrast, completed an average of 14.0 semester hours of student teaching and maintained and average grade point of 3.0.

An examination of Table 2.20 reveals an inconsistency between the elementary and secondary students. The average grade point earned by the regular elementary students for student teaching was 3.0. The Ford elementary students trailed with an average grade point of 2.8. The situation is reversed, however, for the secondary students. The Ford secondary students earned an average grade point of 3.4 for student teaching while their regular counterparts lagged with an average grade point of 3.2. These differences are reflected to some extent in the student teaching ratings (discussed in a subsequent chapter).

---

[32] Since these individuals entered the College of Education as freshmen in the fall of 1961, they should have completed student teaching during the 1964-65 academic year. However, they are "successful" graduates as defined in the preceding chapter. See footnote 2.

Table 2.20

Average Number of Semester Hours of Student Teaching Completed And Average Grade Point of Students from Each of Six Groups

	Group					
	F15A	F15B	F15	R15A	R15B	R15
ASH	6.1	6.0	6.0	14.0	14.0	14.0
AGP	2.8	3.4	2.9	3.0	3.2	3.1

In summary, then, one of the primary distinctions between the Ford and regular programs resided in the character of the student teaching practicum. Although student teaching in both programs extended over one semester, the regular practicum was a full-time experience yielding 14 semester hours of credit while the Ford practicum was a part-time activity yielding six semester hours of credit. The Ford students enrolled in education courses while engaged in student teaching whereas the regular students ordinarily did not.[33]

Although the regular elementary students earned a higher average grade point for student teaching than did their Ford counterparts, the converse was true for the secondary students.

Professional Education--Education Courses[34]

Ford program requirement

The undergraduate program developed by the Professional Education Committee prescribed 15 semester hours of education courses for the Ford elementary students and 13 semester hours of education courses for Ford secondary students. In addition, one semester hour of education (Education 100) was prescribed by the Liberal Arts Committee for all Ford students during their first (freshman) year.[35]

---

[33] Except for a two-semester-hour seminar which, although a separate course, might be considered an integral part of the student teaching practicum.

[34] See footnote 29.

The education course requirement of the Ford program was, then, originally 16 (15 + 1) semester hours for elementary students and 14 (13 + 1) semester hours for secondary students. When the program was implemented, however, these requirements were increased by one semester hour (to 17 semester hours for elementary students and 15 semester hours for secondary students) due to the fact that Education 100 was extended over two semesters and afforded two semester hours of credit.[36]

For all practical purposes, then, the education course requirement was 17 and 15 semester hours respectively for the Ford elementary and secondary students. Relatively few Ford students, however, completed precisely 15 or 17 semester hours of education courses.

Regular program requirement

The program for regular secondary students originally prescribed 15 semester hours of education courses. Subsequently an additional three-semester-hour professional education course in educational psychology[37] was incorporated into their program thereby increasing their education requirement to 18 semester hours.

---

[35] "The committee felt it would be desirable to provide the [Ford] students with an orientation to their experimental curriculum through the medium of Education 100."

[36] Education 100 (1 semester hour) and Education 101 (1 semester hour)

[37] Prior to the inception of Educational Psychology 372 (Educational Psychology), and for several years hence, a seemingly similar course, Psychology 472 (subsequently redesignated Psychology 372), was offered by the College of Arts and Sciences. Psychology 472/372 was prescribed in the program of both regular elementary and regular secondary students. In effect, then, the responsibility for the course shifted from the Arts and Science faculty to the Education faculty. At the time the course was offered by the former, it would have been classified "general education" but since it was offered by the latter it was classified "professional education." See footnote 1.

The program for regular elementary students which existed in the fall of 1961 required 28 semester hours of education courses. The subsequent addition of a three-semester-hour course in educational psychology[37] increased their education requirement to 31 semester hours.

The revision of an existing education course in mathematics increased the credit afforded for the course from two semester hours to three semester hours. The net effect was to further increase the education course requirement of the regular elementary students to 32 semester hours.

Again, relatively few regular students completed exactly 18 (secondary) or 32 (elementary) semester hours of education courses.

Education Courses Completed

It was indicated previously that relatively few students completed the precise number of semester hours of education courses prescribed in their programs. It can be observed in Table 2.21 that the number of semester hours of education completed varies considerably for both Ford and regular students.

---

[37] *ibid*.

Table 2.21

Distribution of Six Groups of Students by Number of Semester Hours of Education* Completed and Average Grade Point

Semester Hours of Education	F15A N	F15A AGP	F15B N	F15B AGP	F15 N	F15 AGP	R15A N	R15A AGP	R15B N	R15B AGP	R15 N	R15 AGP
0-14			1	2.3	1	2.3						
15-16			13	2.8	13	2.8			1	2.7	1	2.7
17-18	65	2.9	2	3.0	67	2.9			13	2.8	13	2.8
19-21	7	2.9	1	3.2	8	2.9			6	2.8	6	2.8
22-24	1	3.7			1	3.7			1	2.9	1	2.9
25-27	3	2.5			3	2.5			3	2.7	3	2.7
28-30							2	2.3			2	2.3
31-33							27	2.8			27	2.8
34-36							27	2.6			27	2.6
37-39							10	2.7			10	2.7
40 or more							2	3.1			2	3.1

*Excluding student teaching. See footnote 29.

There are at least three factors which contributed to the variation among students in number of semester hours of education courses completed as undergraduates.

First, there were a few students (both Ford and regular) in the Selected Studies Program.[38] Students in the College of Education who are in this program ordinarily enroll in two to six[39] additional semester hours of education courses specifically designed for them. This served to increase the total number of semester hours of education completed by these individuals.

Second, a substantial number of students (both Ford and regular) enrolled, as undergraduates, in education courses ordinarily incorporated in the fifth-year (graduate) program. These students were striving to accelerate their progress by enrolling in summer session courses and/or by enrolling in more than the usual number of courses during the academic year. The effect was that many students actually began their fifth-year program as undergraduates. This, too, served to increase the number of semester hours of education completed prior to graduation.

Third, while undergraduates, some students elected to enroll in supplementary or related education courses. An elementary student, for example, who had elected English as his academic minor, completed an education course in children's literature. This also served to increase the total number of semester hours of education courses that an undergraduate completed.

---

[38] A program for "academically promising" students.

[39] The exact number depends on the field in which the student executes his senior honors thesis.

In view of the foregoing, the rather wide within-group student-to-student variation in number of semester hours of education courses completed is not surprising.

A rather striking aspect of Table 2.21, however, is the manner in which the 27/28-semester-hour point divides the students. Not one Ford elementary, Ford secondary, or regular secondary student completed more than 27 semester hours of education courses. In contrast, every regular elementary student completed 28 or more semester hours of education.

Table 2.22 accents the difference between the Ford and regular programs in number of semester hours of education courses completed by an average student from each group. The table also points up the rather sharp difference between the number of semester hours of education completed by the average regular elementary student as compared to the average regular secondary student.

Table 2.22

Average Number of Semester Hours of Education* Completed and Average Grade Point of Students from Each of Six Groups

	Group					
	F15A	F15B	F15	R15A	R15B	R15
ASH	17.7	15.5	17.3	33.9	19.3	30.1
AGP	2.9	2.9	2.9	2.7	2.8	2.7

*Excluding student teaching. See footnote 29.

The average Ford student completed 17.3 semester hours of education courses and earned a grade point of 2.9 as compared to the average regular student who completed 30.1 semester hours of education courses and maintained a grade point of 2.7. The substantial difference[40] between the regular elementary student and the regular secondary student serves to distort the overall average of the regular students. The difference[41] between the Ford elementary and Ford secondary student, in contrast, is small.

As indicated previously, it is not surprising to observe that the average number of semester hours of education courses completed by each group slightly exceeds the number of semester hours prescribed by their respective programs.[42]

In summary, then, the number of semester hours of education courses completed by both Ford and regular students varied widely from student to student within each group. The average number of semester hours of education courses completed by the Ford elementary, Ford secondary, and regular secondary students was less than 20 in every instance whereas the average for the regular elementary students was singular at over 30 semester hours.

The average number of semester hours of education courses completed by each group exceeded, but only slightly, the number of semester hours prescribed for the group.

Finally, the average grade point earned by the Ford students in education courses is slightly higher than that of the regular students.

---

[40] 14.6 semester hours.

[41] 2.2 semester hours.

[42] The average exceeds the program by .7 semester hours for the F15A group, by .5 semester hours for the F15B group, by 1.9 semester hours for the R15A group, and by 1.3 semester hours for the R15B group.

Professional Education--Total Program

Table 2.23 indicates the total number of semester hours of professional education[43] completed by an average student from each group.

Table 2.23

Semester Hours of Professional Education Completed by An Average Student from Each of Six Groups

Semester Hours of Professional Education	Group					
	F15A	F15B	F15	R15A	R15B	R15
SH of Student Teaching	6.1	6.0	6.0	14.0	14.0	14.0
SH of Professional Education Courses	17.7	15.5	17.3	33.9	19.3	30.1
Total SH of Professional Education	23.8	21.5	23.3	47.9	33.3	44.1

---

[43] That is, the number of semester hours of student teaching plus the number of semester hours of education courses. See footnote 29.

An examination of the table reveals that the average Ford student completed 17.3 semester hours of education courses and 6.0 semester hours of student teaching for a total of 23.3 semester hours of professional education. The average regular student, in comparison, completed 30.1 semester hours of education courses and 14.0 semester hours of student teaching for a total of 44.1 semester hours of professional education.

As was true in the general education portion of their program, the difference between the average Ford elementary student and the average Ford secondary student in total semester hours of professional education completed is relatively small.[44] The same is not true of the regular students.[45] Both the regular elementary and the regular secondary students completed an average number of semester hours of professional education well above that of their Ford counterparts.

In summary, then, the Ford elementary and Ford secondary students, on the average, completed approximately the same number of semester hours of professional education. The regular elementary and regular secondary students completed an average number of semester hours of professional education well in excess of that of their Ford peers. Moreover, there was a considerable difference between the regular elementary and regular secondary students in average number of semester hours of professional education completed.

---

[44] 2.3 semester hours.

[45] 14.6 semester hours.

The Undergraduate Programs in Perspective

In the preceding pages the general education and professional education programs of the Ford and Regular students were discussed in detail. In this section an effort will be made to present a perspective of the overall undergraduate program of the students.

Degree requirements and overall grade point averages

The 130-semester-hour requirement for the Bachelor of Education degree at the University of Hawaii was exceeded by both the Ford and the regular students. It can be seen in Table 2.24 that the Ford students, on the average, completed 138.1 semester hours prior to being awarded the bachelor's degree as compared to 137.1 semester hours completed by their regular counterparts. Although there were variations in average grade point within their programs,[46] the overall average grade point of the Ford students and that of the regular students are relatively comparable.

Table 2.24

Average Number of Semester Hours Completed Prior to Award of Baccalaureate and Overall Average Grade Point of Students from Each of Six Groups

	Group					
	F15A	F15B	F15	R15A	R15B	R15
ASH	137.2	142.1	138.1	135.6	141.4	137.1
AGP	2.7	2.7	2.7	2.6	2.7	2.6

---

[46] Tables 2.3, 2.6, 2.9, 2.13, 2.16, 2.20 and 2.22 reflect some of these variations.

Table 2.25 reveals the relative proportion of the undergraduate program that an average student from each group devoted to general and professional education as discussed in this chapter.[47] The average Ford elementary student, for example, devoted 49.8 percent[48] of his undergraduate program[49] to communication and language courses and 33.7 percent[50] of his undergraduate program to other general education courses. Thus 82.7 percent[51] of his undergraduate program was devoted to general education and the remaining 17.3 percent[52] was devoted to professional education.

The data in Table 2.25 reveal again that which was noted in earlier sections of this chapter, that is, (1) the relatively greater emphasis on general education (particularly communication and language courses) in the Ford program, (2) the relative similarity of the programs of the Ford elementary students and the Ford secondary students, and (3) the relative singularity of the regular elementary student in comparison to the regular secondary students and the Ford (elementary and secondary) students.

---

[47] (1) general education--communication and language courses, (2) general education--other courses, (3) professional education--student teaching, and (4) professional education--education courses. See footnotes 1, 8, and 29.

[48] 67.1 semester hours (Table 2.18).

[49] 137.2 semester hours (Table 2.24).

[50] 46.3 semester hours (Table 2.18).

[51] 113.4 semester hours (Table 2.18).

[52] 23.8 semester hours--6.1 semester hours of student teaching and 17.7 semester hours of education courses (Table 2.23).

Table 2.25

Percentage of Undergraduate Program of an Average Student Given to General and Professional Education

	Group					
	F15A	F15B	F15	R15A	R15B	R15
General Education*	82.7%	84.9%	83.1%	64.7%	76.4%	67.8%
Communication and Language Courses	48.9%	49.8%	49.2%	22.7%	28.8%	24.1%
Other Courses	33.7%	35.0%	34.0%	42.0%	47.7%	43.7%
Professional Education*	17.3%	15.1%	16.9%	35.3%	23.6%	32.2%
Student Teaching	4.5%	4.2%	4.3%	10.3%	9.9%	10.2%
Professional Education Courses	12.9%	10.9%	12.5%	25.0%	13.6%	22.0%

*The number of semester hours of general and professional education completed by an average student is indicated in Tables 2.18 and 2.23 respectively.

Chapter 3

STUDENT TEACHING

Introduction

Major program differences

It was stressed in the preceding chapters that one of the most salient differences between the Ford and regular programs was the student teaching practicum. The difference, it will be recalled, resided in the relative amount of time allocated to, and the character of, this phase of professional education.

The Ford program prescribed a part-time[1] student teaching experience extending over one semester, with concurrent enrollment in education courses. The intent, according to the report of the Professional Education Committee, was to insure " . . . a close relationship between theoretical discussion [in the education courses] and actual classroom [student] teaching experiences." " . . . [T]herefore," the report continues, "experiences in special methods [courses] and student teaching should be conducted concurrently to some extent."[2] In brief, the rationale seemed to be that a program which required the student to enroll in education courses and engage in student teaching at the same time would enable the student to better relate the two experiences and, therefore, develop into a more effective teacher.

---

[1] There are no data available which indicate exactly what proportion of the Ford students' time was actually devoted to student teaching. Although it probably varied considerably from individual to individual, it appears that the Ford student typically devoted about one-half of his time to student teaching and the other half to the concurrent professional education (and, in some instances, general education) courses.

[2] Again there are no data available which indicate the extent to which " . . . a close relationship between theoretical discussion and . . . student teaching . . . " was indeed realized. It appears, however, that the objective was an elusive one and that the extent to which it was attained varied from course to course and individual to individual.

The regular program, in contrast, prescribed a full-time one-semester student teaching experience. The regular student ordinarily devoted virtually all of his time to student teaching. The concurrent two-semester-hour education course[3] in which he enrolled focused primarily on student teaching. The regular student had completed prior to student teaching education courses generally comparable to those in which the Ford student was enrolled during student teaching and he was, therefore, able to devote his full attention to the (student teaching) classroom.

The rationale for the regular program, then, seemed to be that requiring the student to complete certain education courses prior to student teaching would provide him with sufficient background to enable him to devote full-time to student teaching. The more extensive pre-student-teaching program plus more time in the classroom would make student teaching more meaningful and, therefore, foster the development of a more effective teacher.

Organization of the student teaching program

The general organization of the student teaching program was the same for both Ford and regular students.

The student teacher (Ford or regular) was assigned to, and under the immediate supervision of, a "cooperating teacher."[4] The cooperating teacher is ordinarily a public school teacher employed by the Hawaii State Department of Education.[5] He is officially designated a cooperating teacher by the College of Education[6] and he receives a supplementary salary[7] from the University of Hawaii to compensate him for the additional duties and responsibilities entailed in the supervision of student teachers.

---

[3] "Seminar for Student Teachers"

[4] Although "cooperating teacher" is the proper designation, locally the terms "cooperating teacher," "supervisor," and "CT" are used interchangeably.

[5] The Hawaii State Department of Education is the one and only public (elementary or secondary) school system in Hawaii. There are no local school systems comparable to those in most of the other states. Although the Hawaii State Department of Education organizational pattern includes several "districts," these are not comparable to the typical local school districts in most other states. The Hawaii public school system, then, is essentially a combination state-local system.

College of Education surveillance of the student teaching program is maintained by a staff of "coordinators"[8] who are College of Education faculty members.

As indicated above, the majority of student teachers are assigned to public schools but there are a limited number of instances when student teachers are assigned to non-public schools or to the Hawaii Curriculum Center which maintains a laboratory school.

Source of data

All data on assessments of student teaching reported herein were extracted from the "Teacher Evaluation Record" (elementary) or the "Evaluation of Teaching Competencies of Student Teaching" (secondary) for each "successful" graduate.[9] It was possible to locate the student teaching evaluations of all 189 "successful" graduates of the two programs.[10]

Methods of reporting assessments

There were two methods employed in officially reporting the cooperating

---

[6] With, of course, the approval of the school administration and the agreement of the teacher.

[7] In addition to his regular salary as a teacher which is paid by the Hawaii State Department of Education.

[8] A more appropriate designation of these individuals would probably be "clinical professors."

[9] See footnote 2 in the preceding chapter.

[10] All data reported in this chapter, then, are based on the following Ns:

F15A=79	R15A=68
F15B=17	R15B=25

teacher's assessment of a student teacher: (1) the assignment of a letter grade, i.e., A, B, C, D, or F and (2) the completion of an evaluation form[11] which involved the assignment of ratings on a number of variables.

This chapter will deal exclusively with the latter since the former was discussed in the preceding chapter.[12]

Student Teaching--Elementary

Comparison in terms of stratification variables

The two groups of elementary student teachers (Ford and regular) on which the data reported in this section are based were compared in terms of the six stratification variables.[13] The chi square[14] data in Table 3.1 reveal that the groups do not differ significantly on any of the stratification variables.

---

[11] The "Teacher Evaluation Record" (elementary) or the "Evaluation of Teaching Competencies of Student Teachers" (secondary).

[12] See "Professional Education--Student Teaching" in the preceding chapter.

[13] The stratification variables and categories are described in detail in Chapter 1.

[14] The procedures employed in the computation of chi square are described in the appendix.

Table 3.1

Distribution of Two Groups of Students on Six Stratification Variables

		Category												
Variable	Group	A	B	C	D	E	F	G	H	I	J	Z	Chi Square	p
OP	F15A	0	6	12	13	16	12	16	4	0	0		1.01	.99 < .98
	R15A	0	6	10	10	17	12	10	3	0	0			
CS	F15A	60	10	6	0	1							1.05	.70 < .50
	R15A	39	17	10	1	0								
SS	F15A	6	13	11	13	36							1.02	.95 < .90
	R15A	3	7	7	16	35								
LS	F15A	72	7										.001	.98 < .95
	R15A	63	5											
TS	F15A	67	12										.13	.80 < .70
	R15A	60	8											
S	F15A	0	79										.01	.95 < .90
	R15A	1	67											

Instrument

The instrument employed in the assessment of the student teaching of both Ford and regular elementary students was the "Teacher Evaluation Record" which provided for a rating on each of the following variables:[15]

EST 1 Shows a sincere interest in boys and girls and accepts them as they are.

EST 2 Demonstrates ability to establish relationships with children which lead to a cooperative teaching-learning situation.

EST 3 Plans learning experiences in accordance with principles of child growth and development.

EST 4 Plans learning experiences in accordance with sound principles of the learning process.

EST 5 Draws on scholarly background to enrich children's learning.

EST 6 Explores and utilizes available educational resources of the community in the curriculum.

EST 7 Utilizes effective instructional procedures.

EST 8 Promotes growth in the appreciations, attitudes, and abilities required for intelligent participation in a democratic society.

EST 9 Utilizes adequate evaluation procedures.

EST 10 Is capable of mature objectivity in pupil and self evaluation.

EST 11 Demonstrates ability to collect, interpret, and use pertinent information about each pupil.

EST 12 Demonstrates ability to use appropriate counseling techniques and resources.

EST 13 Seeks parent cooperation and participation in matters concerning their children and the school.

EST 14 Evidences vitality commensurate with the work load.

EST 15 Assumes responsible and cooperative role as staff member.

EST 16 Demonstrates desirable professional attitudes, leading to continuous growth in overall competency.

---

[15] The designation which precedes each variable (e.g., EST 1) has been added for convenience in referring to the variables.

The instrument required the cooperating teacher to assess (rate) the student on each variable as "Outstanding," "Strong," "Average," "Below Average," or "Unsatisfactory."[16] Although the scale incorporated five categories, the cooperating teachers rarely employed the "Unsatisfactory" category.[17] Consequently, the mean ratings are higher and the standard deviations are smaller than would ordinarily be expected.[18]

Comparison of ratings

Table 3.2 indicates the mean rating of each group on each variable and the probability of the difference between the two means for each variable.

---

[16] The values assigned to each rating for the purpose of statistical analysis were: 5 ("Outstanding"), 4 ("Strong"), 3 ("Average"), 2 ("Below Average"), and 1 ("Unsatisfactory").

[17] The "Unsatisfactory" category was used in only eight of a total of 2352 ratings (16 variables x 147 student teachers). This is probably due, in part at least, to the "positive leniency error" which Guilford describes as the propensity of raters " . . . to rate those whom they know well, or in whom they are ego-involved, higher than they should." (J.P. Guilford, Psychometric Methods, New York, McGraw-Hill, 1954, p. 278) The relationship between the cooperating teacher and the student teacher is ordinarily close in that it entails a one-to-one association of a semester's duration. The cooperating teacher is likely to be ego-involved because the "success" of the student teacher is ofttimes perceived as a reflection of his "success" as a cooperating teacher. The limited use of the "Unsatisfactory" category may also be due to the fact that the student teachers whose performance is marginal often withdraw from student teaching prior to the end of the semester. An evaluation is accomplished at the end of the semester only for those student teachers who have engaged in student teaching for the entire semester.

[18] Assuming a symmetrical distribution across a five category scale.

Table 3.2

Mean Rating of Two Groups of Elementary Student Teachers on Sixteen Variables

Variable	F15A	R15A	p
EST 1	4.1	4.3	.10 < .05
EST 2	3.5	3.9	.01 < .001
EST 3	3.6	3.9	.02 < .01
EST 4	3.5	3.7	.10 < .05
EST 5	3.8	3.8	
EST 6	3.9	4.0	.50 < .40
EST 7	3.6	3.7	.50 < .40
EST 8	3.5	3.8	.02 < .01
EST 9	3.4	3.7	.01 < .001
EST 10	3.7	4.0	.02 < .01
EST 11	3.4	3.6	.10 < .05
EST 12	3.3	3.6	.01 < .001
EST 13	3.3	3.4	.60 < .50
EST 14	3.8	4.1	.02 < .01
EST 15	3.6	4.0	.01 < .001
EST 16	3.9	4.1	.10 < .05

It can be seen that the mean rating of the regular elementary student teachers exceeds that of their Ford counterparts on every variable except one (EST 5). The difference between the means is statistically significant,[19] however, for only eight[20] of the variables.

Although the sixteen rating variables are framed in rather generalized language, it is possible to classify them into five areas:[21]

(1) in-the-classroom relationships (EST 1 and EST 2)

(2) planning and executing instruction (EST 3, EST 4, EST 5, EST 6, EST 7, and EST 8)

(3) evaluation and counseling (EST 9, EST 10, EST 11, and EST 12)

(4) out-of-the-classroom relationships (EST 13 and EST 15)

(5) personal and professional considerations (EST 10,[22] EST 14, and EST 16)

Program differences and performance differences

The number and complexity of the confounding variables in a study such as this makes it difficult at best to account for specific teacher performance differences (or the absence of differences) in terms of specific program differences. Nonetheless, it is interesting (and hopefully worthwhile) to attempt to relate program differences (and similarities) and performance data even though it is often necessary to hypothesize the relationships.

---

[19] That is, $p < .05$.

[20] EST 2, EST 3, EST 8, EST 9, EST 10, EST 12, EST 14, and EST 15.

[21] The reader might discern other patterns into which the variables can be organized. There is no special rationale underlying this one except that it seems to make sense for the purpose of this discussion.

[22] EST 10 is included in both (3) and (5) since it is "double-barreled" in the sense that it concerns both pupil evaluation and student teacher self-evaluation.

Thus in this chapter, and in ensuing chapters, there will be from time to time attempts to relate program and performance similarities and differences and to view performance data against expectations which seem to evolve logically from program differences.

In-the-classroom relationships

In the estimation of the cooperating teachers, the regular student teachers were more able to demonstrate the " . . . ability to establish relationships with children which lead to a cooperative teaching-learning situation" (EST 2) than their Ford counterparts. As to a " . . . sincere interest in boys and girls" (EST 1), however, there was no (significant) difference between the two groups.

The fact that they were enrolled in the College of Education would indicate that the students from both groups (Ford and regular) possessed from the outset some degree of interest in children. It is not particularly surprising, then, that there was no difference between the groups in this respect (EST 1).

The lesser ability of the Ford student teachers " . . . to establish relationships with children" (EST 2) might be attributable, in part at least, to the fact that the Ford student teachers were less "prepared" to interact with children in the classroom in that they had no pre-student-teaching in-the-classroom experiences comparable to those of the regular student teachers.[23]

Planning and executing instruction

Since the regular student teachers had completed considerably more education courses prior to student teaching, it might have been expected that, in the area of planning and executing instruction particularly, they would outperform their Ford counterparts. The mean ratings of the regular student teachers on two variables in this area were significantly greater than those of their Ford peers. The cooperating teachers saw the regular student teachers as more competent in planning " . . . learning experiences in accordance with principles of child growth and development" (EST 3) and better able to foster " . . . growth in appreciations, attitudes, and abilities required for intelligent participation in a democratic society" (EST 8).

---

[23] The regular students had completed EE 220 (Elementary Education) and EE 221 (The Elementary School Program), both of which afforded an opportunity for classroom observation. The latter provided an opportunity for actual participation in classroom.

In spite of any professional handicap that the Ford elementary student teachers might have had, they held their own in comparison with their regular peers in that their mean ratings on the other four variables were not significantly different than those of the regular student teachers. The Ford student teachers equalled the regular student teachers in ability to plan " . . . learning experiences in accordance with sound principles of the learning process" (EST 4), in proficiency in utilizing " . . . available educational resources of the community" (EST 6) and, in competence in using " . . . effective instructional procedures" (EST 7).

The single variable in this area on which the Ford student teachers might have been expected to outperform their regular peers was that concerning the capacity for drawing " . . . on scholarly background to enrich children's learning" (EST 5).[24] However, there was no significant difference between the mean rating of the regular student teachers and that of the Ford student teachers on this variable.

---

[24] The emphasis in the Ford program, particularly prior to the semester in which student teaching was undertaken, was on general education.

Evaluation and counseling

It was the area of evaluation and counseling in which the cooperating teachers considered the regular student teachers as generally more effective in comparison with the Ford student teachers. The mean ratings of the regular student teachers was significantly higher than that of their Ford peers on three of the four variables in this area. The regular student teachers were considered more " . . . capable of mature objectivity in pupil and self evaluation" (EST 10), better able to utilize " . . . adequate evaluation procedures" (EST 9), and more competent in the " . . . ability to use appropriate counseling techniques and resources" (EST 12).

The Ford student teachers equalled their regular peers, however, in demonstrating " . . . ability to collect, interpret, and use pertinent information about each student" (EST 11).

Out-of-the-classroom relationships

Although the Ford and regular student teachers were equally effective in seeking " . . . parent cooperation and participation" (EST 13), the regular student teachers attained a mean rating significantly higher than that of their Ford peers in assuming a " . . . responsible and cooperative role as staff member[s]" (EST 15).

The Ford program, it will be recalled, entailed a part-time student teaching experience while the regular program provided for full-time student teaching. It seems at least possible that the regular student teacher was better able to establish effective relationships with the staff of the school to which he was assigned since his full-time status probably involved him more deeply in the "life of the school." The Ford student teacher, in contrast, due to his part-time status, was one who "came and went" and, consequently, was not as well integrated into the social and professional subculture characteristic of the typical elementary school. The foregoing is mere speculation, of course, and there are no data available which would either corroborate it or refute it.

Personal and professional considerations

Although there is no significant difference between the Ford and regular student teachers as to the extent to which they demonstrate " . . . desirable professional attitudes, leading to continuous growth in overall competency" (EST 16), the regular teachers were viewed by the cooperating teachers as more "capable of mature objectivity in pupil and self evaluation" (EST 10).[25]

As to demonstrating " . . . desirable professional attitudes, leading to continuous growth in overall competency," (EST 16) the mean ratings of the Ford and regular student teachers were not significantly different.

Overview of elementary student teaching

The Ford and regular elementary student teachers were rated by their cooperating teachers on 16 variables. In eight instances, the mean rating of the regular student teachers was significantly higher than that of their Ford peers. There was not a single instance in which the converse was true.

The variables on which the differences between mean ratings of the Ford and regular student teachers are significant cut across all areas[26] in an almost random fashion and do not seem to reveal any meaningful clusters or patterns.

---

[25] The concern here is with self evaluation. The relative extent to which "pupil . . . evaluation" and "self evaluation" influenced the rating assigned to a given student teacher by his cooperating teacher is, of course, unknown. This decreases the value of this variable in attempting to make meaningful comparison between the Ford and regular student teachers.

[26] That is, in-the-classroom relationships, planning and executing instruction, evaluation and counseling, out-of-the-classroom relationships, and personal and professional considerations.

In a very broad sense, it might be said that the cooperating teachers viewed the regular student teachers as possessing a better understanding of children, capable of more effective evaluation and guidance, and more competent in certain important[27] relationships with children and other adults.

The regular student teachers were not as superior to the Ford student teachers in the area of planning and executing instruction as might have been expected from program differences.[28] The Ford student teachers, by the same token, were not superior to the regular students on the "scholarly background" variable (EST 5) as might have been expected from program differences.[28]

Assumptions about rater error

It has been assumed in the foregoing discussion that any rater error has not been differential, that is, that the character of the rater error in the data for the Ford student teachers is not unlike that in the data for the regular student teachers. In the absence of evidence to the contrary, this seemed to be a reasonable assumption.

It is possible, of course, that there was in fact differential rater error. The differences between the Ford and regular programs may have fostered such error. It is unknown, for example, whether the cooperating teachers responsible for Ford student teachers "took into account" their different pre-student-teaching undergraduate program[29] in rating them. In the same vein, it is unknown to what extent, if any, predispositions regarding the relative merits of the two programs

---

[27] That is, "important" in the view of the cooperating teachers.

[28] That is, the relative emphasis on general education and professional education of the two programs (Ford and regular).

[29] That is, different from that of the regular student teachers.

(Ford and regular) may have influenced (consciously or otherwise) the ratings assigned to student teachers.

The records are not clear as to whether or not differential instructions were given to the cooperating teachers concerning the rating of the Ford and the regular student teachers. Again, it was assumed in the preceding discussion that differential instructions were not given to the cooperating teachers.

In short, then, it is crucial that the potential limitations on these data be recognized and that the findings be weighed accordingly.

Student Teaching--Secondary

Comparison in terms of stratification variables

The two groups of student teachers (Ford and regular) on which the data reported in this section are based were compared in terms of the six stratification variables.[30] The chi square[31] data in Table 3.3 reveal that the groups did not differ significantly on any of the stratification variables.

---

[30] The stratification variables and categories are described in detail in Chapter 1.

[31] The procedures employed in the computation of chi square are described in the appendix.

Table 3.3

Distribution of Two Groups of Students
on Six Stratification Variables

		Category												
Variable	Group	A	B	C	D	E	F	G	H	I	J	Z	Chi Square	p
OP	F15B	2	1	3	0	5	5	1	0	0	0		1.01	.50<.30
	R15B	2	2	3	9	5	2	4	0	0	0			
CS	F15B	13	0	3	0	0						1	.09	.80<.70
	R15B	18	4	3	0	0						0		
SS	F15B	0	0	5	3	9							1.12	.70<.50
	R15B	2	4	7	7	5								
LS	F15B	16	1										.26	.70<.50
	R15B	21	4											
TS	F15B	17	0										1.44	.30<.20
	R15B	21	4											
S	F15B	0	17										.76	.50<.30
	R15B	3	22											

Instrument

The instrument employed in the assessment of the student teaching of both Ford and regular secondary students was the "Evaluation of Teaching Competencies of Student Teachers" which provided for a rating on each of 38 variables grouped under six "phases:" (1) "Personal Qualifications," (2) "Ability to Work with People," (3) "Professional Preparation," (4) "Teaching Skills and Techniques," (5) "Classroom Management," and (6) "Evaluation of Teacher Progress." The variables[32] are:

SST 1-1	Health: vigor, power of recovery, endurance.
SST 1-2	Appearance: good-grooming, appropriateness of attire, neatness, posture.
SST 1-3	Manners: courtesy, thoughtfulness, kindness, tact.
SST 1-4	Emotional control: poise, self-assurance, dignity, composure.
SST 1-5	Disposition: cheerfulness, optimism, sense of humor, sociability, sympathy.
SST 1-6	Leadership: enthusiasm, initiative, dependability, ability to inspire and encourage participation of students.
SST 1-7	Cooperation: teamwork, spirit of service.
SST 1-8	Professional attitude and conduct: pride in the profession, feeling that teaching is worthwhile and worth doing well, feeling of responsibility to students and to school, eagerness to continue learning.
SST 2-1	Inspires confidence.
SST 2-2	Values contributions from others.
SST 2-3	Respects rights and feelings of others.
SST 2-4	Shows warm feeling toward students.

---

[32] The designation which precedes each variable (e.g., SST 2-1) has been added for convenience in referring to the variables. The digit preceding the hyphen refers to the "phase" and the digit following the hyphen refers to a variable included in that phase. The designation SST 3-2, for example, means "Secondary Student Teaching phase 3, variable 2."

SST 2-5	Accepts students irrespective of their mental ability or their racial, economic, and social background.
SST 2-6	Maintains rapport with boys and girls on a mature level as a teacher, without complete identification with them.
SST 2-7	Works harmoniously with staff.
SST 2-8	Works harmoniously with colleagues.
SST 3-1	Understanding of the role of a teacher and of education in a democracy.
SST 3-2	Knowledge of theories and practices.
SST 3-3	Attitude toward current thought: open-mindedness, spirit of research, ability to adjust and readjust.
SST 3-4	Educational initiative: productive and independent thinking, ability to plan and execute new work, knowledge and use of sources and techniques to improve teaching, active participation at conferences.
SST 4-1	Planning and organizing: objectives clearly understood by pupils and teachers through long term and weekly and/or daily plans.
SST 4-2	Motivating students to work up to their capacity.
SST 4-3	Skill in using knowledge: intelligent choice and organization of teaching materials.
SST 4-4	Using effective instructional practices: leading discussions, making assignments, using demonstrations and other methods of presentation, using creative and imaginative teaching procedures, locating and using a variety of resource materials, directing study-work periods, holding pupil-teacher conferences.
SST 4-5	Command and use of spoken English: speech that is communicative and worthy of imitation by students. Vocal adequacy--including pleasing quality, volume control, and meaningful variety in rate, force, and pitch; language adequacy--including acceptable grammar, pronunciation free from consistent sound substitutions and rhythmical deviations, and acceptable idiomatic usage and vocabulary.
SST 4-6	Command and use of written English: appropriate vocabulary, accuracy, fluency, coherence, grammar, use of idiom, spelling.
SST 4-7	Counseling and guiding students wisely: understands and appreciates student limitations and abilities, and plans and works with these in mind; attempts to bring out the best in each student.
SST 4-8	Evaluating student progress: developing sound bases for evaluation using a wide variety of data gathering techniques, making personal observations.

SST 4-9 Evaluating teacher performance in terms of pupil growth and fulfillment of objectives.

SST 4-10 Guiding learning procedures effectively: stimulating group thinking, making learning experiences meaningful to students, helping children develop academic skills.

SST 5-1 Attention to physical conditions: provisions for pupils' comfort (lighting, ventilation, seating), caring for supplies and equipment.

SST 5-2 Appearance of classroom: cleanliness, orderliness, attractiveness.

SST 5-3 Attention to routine matters: promptness and accuracy, economic use of time, wise use of students' help.

SST 5-4 Control and discipline: ability to get and hold attention, firmness and consistency in the carrying out of instructions, understanding of pupil behavior, direction of students in effective use of time, encouragement of self-discipline.

SST 6-1 Attitude toward supervision: reaction to and use of suggestions, reaction to helpful criticism.

SST 6-2 Sensitivity to problems: ability to recognize and analyze problems and to formulate a program of action.

SST 6-3 Desire for self-improvement through a continuous, planned program of self-evaluation.

SST 6-4 Growth in competencies: improvement through experience, decrease in the recurrence of undesirable situations, increase in ease and efficiency in teaching, development of sound educational practices.

The instrument required the cooperating teacher to assess (rate) the student on each variable as "excellent," "good," "average," "poor," "failing," or "no opportunity to observe."[33]

---

[33] The value assigned to each rating for the purpose of statistical analysis were: 5 ("excellent"), 4 ("good"), 3 ("average"), 2 ("poor"), and 1 ("failing"). The "no opportunity to observe" category was used in nine of a total of 1596 ratings (38 variables x 42 student teachers). No value was assigned to "no opportunity to observe," and statistical computations were modified as appropriate.

Although the scale incorporated five categories, the cooperating teachers rarely employed the "failing" category.[34] Consequently, the mean ratings are higher and the standard deviations are smaller than would ordinarily be expected.[35] The reader will recall that the same kind of situation prevailed in the case of the elementary student teacher ratings.[36]

Comparison of ratings

Table 3.4 indicates the mean rating for each group on each variable and the probability of the difference between the two means for each variable.

The mean ratings of the regular secondary student teachers exceed those of their Ford counterparts on ten[37] variables. In comparison, the mean ratings of the Ford secondary student teachers equal those of their regular peers on six variables[38] and exceed them on twenty-two variables.[39]

These data create a considerably different picture than that for the elementary student teachers.[40] The reader will recall that the mean rating of the Ford elementary student teachers equalled that of their regular counterparts for only one variable and that in no instance did the mean ratings of the Ford students exceed those of the regular students.

---

[34] The "failing" category was used in two of a total of 1596 ratings.

[35] Assuming a symmetrical distribution across a five category scale.

[36] See footnote 17.

[37] SST 1-1, SST 1-2, SST 1-3, SST 1-4, SST 1-6, SST 3-2, SST 4-2, SST 4-5, SST 4-6, and SST 4-9.

[38] SST 1-5, SST 2-1, SST 2-5, SST 3-1, SST 4-1, and SST 4-4.

[39] All variables not listed in footnotes 37 and 38.

[40] See Table 3.2

It will be recalled, too, that the difference between the means was statistically significant[41] for eight of the 16 elementary student teaching variables. This stands in distinct contrast to the secondary student teaching variables where the difference between the means is not significant[41] for any of the 38 variables.

Personal qualifications

Of the eight variables in this phase, the greatest (though not significant) difference between the mean ratings of the Ford and regular secondary student teachers was on the "health" variable (SST 1-1). The regular secondary student teachers were viewed by the cooperating teachers as demonstrating somewhat more "vigor, power of recovery [and] endurance."

The reader will recall that in the case of the elementary student teachers the mean rating of the regular group on evidence of " . . . vitality commensurate with the work load" (EST 14) was significantly[41] higher than that of the Ford group.

The foregoing suggests that perhaps the Ford students were more "illness prone" than their regular counterparts and that they may have had a higher absence-due-to-illness rate.[42]

Some observers have contended that the work load of the Ford students was overwhelming during the semester in which student teaching was accomplished. It is possible, then, that the Ford student teachers revealed more symptoms of excessive fatigue and that the cooperating teachers, therefore, tended to rate them lower on the "health" variables.[43] There is no adequate evidence to either corroborate or refute the foregoing.

---

[41] That is, $p < .05$.

[42] Unfortunately there are no data available on the attendance records of these student teachers.

[43] EST 14 and SST 1-1.

Table 3.4

Mean Rating of Two Groups of Secondary Student Teachers on Thirty-eight Variables

Variable	F15B	R15B	p
SST 1-1	4.1	4.4	.20<.10
SST 1-2	4.4	4.6	.30<.20
SST 1-3	4.5	4.7	.30<.20
SST 1-4	4.2	4.3	.70<.60
SST 1-5	4.5	4.5	
SST 1-6	4.0	4.1	.80<.70
SST 1-7	4.6	4.5	.60<.50
SST 1-8	4.6	4.4	.40<.30
SST 2-1	4.0	4.0	
SST 2-2	4.6	4.4	.40<.30
SST 2-3	4.6	4.4	.30<.20
SST 2-4	4.7	4.5	.30<.20
SST 2-5	4.6	4.6	
SST 2-6	4.4	4.2	.40<.30
SST 2-7	4.6	4.4	.30<.20
SST 2-8	4.7	4.5	.30<.20
SST 3-1	4.0	4.0	
SST 3-2	3.6	3.9	.20<.10
SST 3-3	4.4	4.3	.70<.60
SST 3-4	4.3	4.2	.70<.60
SST 4-1	4.0	4.0	
SST 4-2	3.8	4.0	.50<.40
SST 4-3	4.2	4.1	.70<.60
SST 4-4	4.0	4.0	
SST 4-5	4.1	4.2	.60<.50
SST 4-6	4.3	4.4	.70<.60
SST 4-7	4.4	4.1	.30<.20
SST 4-8	4.4	4.1	.30<.20
SST 4-9	4.0	4.1	.70<.60
SST 4-10	4.1	4.0	.70<.60
SST 5-1	4.2	4.0	.40<.30
SST 5-2	4.1	3.9	.40<.30
SST 5-3	4.3	4.2	.70<.60
SST 5-4	3.9	3.7	.40<.30
SST 6-1	4.7	4.4	.20<.10
SST 6-2	4.2	3.9	.20<.10
SST 6-3	4.6	4.3	.20<.10
SST 6-4	4.6	4.2	.10<.05

Ability to work with people

The differences between the mean ratings of the Ford and regular secondary student teachers on the eight variables in this phase were minimal.

The Ford and regular secondary student teachers were apparently equally successful in developing effective staff relationships (SST 2-7). It will be recalled that the Ford elementary student teachers were rated significantly lower than their regular peers on a similar variable (EST 15).

It was conjectured[44] that perhaps the part-time status of the Ford elementary student teachers made it difficult for them to effectively enter into the social and professional subculture of the school. The social and professional subculture which is characteristic of the typical secondary school is (in the view of the writer, at least) somewhat different from that of the elementary school and the difference may be such that the Ford secondary student teachers were able to establish effective staff relationships more readily than their (Ford) elementary peers.

Again, the foregoing is speculation and there are no data available which would either corroborate it or refute it.

Professional preparation

At first blush, one might expect marked differences (in favor of the regular students) between the mean ratings of the Ford and regular students on the four variables in this phase because of relative emphasis on general and professional education in their undergraduate programs.

---

[44] See "*Out-of-the-classroom relationships*."

In the case of secondary students, however, it will be recalled that the number of semester hours of education courses[45] prescribed for the regular students exceeded the number prescribed for the Ford students by only three semester hours.[46] Moreover, at the end of the semester during which student teaching was completed,[47] the Ford secondary student teachers ordinarily[48] had completed 15 semester hours of education courses while the regular secondary students had completed 12 or 18 semester hours depending on whether they engaged in student teaching during the first or the second semester.

In view of the foregoing, then, it is not surprising that the mean ratings on the professional preparation variables do not differ significantly.

Teaching skills and techniques

As indicated in the previous section,[49] the difference between the Ford and regular secondary students in terms of number of semester hours of education courses completed by the end of the semester during which student teaching was accomplished was minimal. It might be expected, then, that differences between the two groups (Ford and regular) of secondary student teachers on the 10 teaching skills and techniques variables would be minimal.[50] The data corroborate this expectation.

---

[45] See footnote 30 in the preceding Chapter.

[46] As undergraduates, the regular secondary students actually completed, on the average, 3.8 more semester hours of education courses than did their Ford counterparts. See Table 2.23

[47] The rating of student teachers is ordinarily accomplished at the end of the semester.

[48] That is, if the student complied with the prescribed sequence of courses for his program.

[49] "Professional preparation."

The reader will recall that the general education program for the Ford (elementary and secondary) students emphasized communication and language[51] and that the Ford secondary students completed 5.3 more semester hours of English, on the average, than their regular counterparts.[52]

In view of the foregoing, it might be expected that the mean ratings of the Ford secondary student teachers on the two variables which pertain to the use of English[53] would be higher than those of their regular peers. However, there was no appreciable difference between the mean ratings of the two groups on either "command and use of spoken English" (SST 4-5) or "command and use of written English" (SST 4-6).

Classroom management

The differences between the mean ratings of the Ford and regular student teachers on the four variables in this phase were minimal and non-significant.

The mean ratings for both the Ford and the regular student teachers on the "control and discipline" variable (SST 5-4) are lower than their mean ratings on any of the other three variables. This suggests that both groups experienced somewhat more difficulty in coping with "control and discipline" in the classroom than with the other aspects of classroom management.

---

[50] It might be argued, however, that even though the difference between the Ford and regular secondary students in terms of semester hours of education courses completed was minimal, the regular student teachers engaged in student teaching virtually full time while their Ford counterparts were able to devote only about one-half (see footnote 1) of their time to student teaching. The regular student, therefore, had more opportunity to improve teaching skills and techniques over the semester.

[51] See "Ford program emphasis on communication and language" in the preceding chapter.

[52] See Table 2.3 in the preceding chapter.

[53] SST 4-5 and SST 4-6.

Evaluation of teacher progress

It is in the area of evaluation of teacher progress that the largest differences between the mean ratings of the two groups (Ford and regular) of secondary student teachers reside. Although the differences are not statistically significant, only two other variables[54] approach significance to the same degree.

The mean ratings suggest that in comparison to the regular student teachers the Ford student teachers possessed a more positive attitude toward supervision, were somewhat more sensitive to problems, demonstrated a greater desire for self-improvement, and evidenced relatively greater growth in competences over the semester.

There have been informal reports that the Ford student teachers considered themselves "underdogs"[55] at the outset of student teaching and that, consequently, they seemed to be highly motivated to equal, if not excel, their regular counterparts.[56]

Although the evidence is by no means conclusive, it seems at least possible that the intensity of the desire to achieve on the part of the Ford students may have contributed to the behavior which prompted the cooperating teachers to rate them somewhat higher, on the average, than their regular counterparts on the variables in this area.

---

[54] SST 1-1 and SST 3-2.

[55] That is, disadvantaged in comparison to the regular students in terms of amount of professional education completed.

[56] For example, the "Coordinator, Ford Program , Secondary Education, 1964-65" wrote in a memorandum (dated June 8, 1965) directed to the "Director, Secondary Education" that " . . . the first group of Ford students have a strong group identification and a desire to do well."

Overview of secondary student teaching

The Ford and regular secondary student teachers were rated by their cooperating teachers on 38 variables grouped under six phases. There was not a single variable, however, on which the mean rating of one group differed significantly[57] from that of the other group.

Since the number of semester hours of education courses completed by the end of the semester during which student teaching was accomplished was not markedly different for the two groups (Ford and regular), the absence of statistically significant differences between the mean ratings on the professional preparation variables and the teaching skills and techniques variables was not unexpected.

Although the Ford secondary student teachers completed 5.3 more semester hours of English than their regular counterparts, there was no appreciable difference between the mean ratings of the two groups on the English variables.[58]

Finally, it was speculated that the higher (but not significantly higher) mean ratings of the Ford students on the evaluation of teacher progress variables might have been attributable to unusually high achievement motivation.

The remarks[59] in the section on elementary student teaching concerning potential limitations on the data due to possible differential rater error are equally applicable to the secondary student teaching data.

---

[57] That is, $p < .05$.

[58] SST 4-5 and SST 4-6.

[59] See "Assumptions about rater error."

Student Teaching in Perspective

In the preceding pages the assessment of the student teaching of both the Ford and the regular students by their cooperating teachers was discussed in detail.

It was noted that there were no (statistically) significant differences between the Ford and regular secondary student teachers on any of the 38 variables on which they were rated. There were, however, (statistically) significant differences between the Ford and regular elementary student teachers on eight of the sixteen variables on which they were rated. In every instance, the regular student teachers bested their Ford couterparts.

It was possible to discern few relatively direct relationships between specific variables and specific elements of the undergraduate programs of the student teachers.[60] Consequently, it was necessary in most instances to hypothesize relatively broad relationships which seemed reasonable. In the instances in which there seemed to be rather direct relationships, such as the English variables (SST 4-5 and SST 4-6) in the case of the secondary student teachers, the differences proved to be non-significant.

In viewing the professional program of the secondary student teachers it was observed that at the end of the semester immediately prior to student teaching the Ford students had typically completed 7 semester hours of education courses whereas their regular counterparts had completed 10 to 16 semester hours--a difference of 3 to 9 semester hours. At the end of the semester in which student teaching was completed, the Ford secondary students had typically completed 15 semester hours of education courses while the number of semester hours completed by their regular peers ranged from 12 to 18 semester hours--a difference of not more than 3 semester hours. The difference between the Ford and regular secondary students in terms of semester hours of education courses completed, then, was minimal. If there is, indeed, a general relationship between professional education program and student teaching performance, the no-significant-difference finding for the secondary students is not unexpected.

---

[60] See "Program differences and performance differences."

A different picture emerges for the elementary student teachers. At the end of the pre-student-teaching semester the 7 semester hours of education courses ordinarily completed by the Ford students stood in sharp contrast to the 24-32 semester hours completed by the regular students--a difference of 17 to 25 semester hours. At the end of the student-teaching semester the gap was reduced to 9 to 15 semester hours, since by this time the Ford students had ordinarily completed 17 semester hours of education courses while their regular counterparts had completed from 26 to 32 semester hours.

The difference between the Ford elementary and regular elementary students, in terms of semester hours of education courses typically completed was, then, relatively large in comparison to the secondary students. Again, assuming a general relationship between professional education program and student teaching performance, the differences between the Ford and regular elementary student teachers that were observed are not surprising.

The foregoing data would seem to suggest that there is, in fact, some sort of general relationship between professional education program and student teaching performance. However, the evidence is by no means conclusive and the confounding variables are many.

In any event, whether the differences are real or not, the crucial question concerns the future: do the differences (or lack of differences) persist in teaching performance subsequent to student teaching?

CHAPTER 4

NATIONAL TEACHER EXAMINATIONS

Introduction

The examinations

The National Teacher Examinations (NTE) is a battery of objective tests intended to evaluate the quality of academic preparation of prospective teachers in three curricular areas: professional education, general education, and field-of-teaching specialization. The Educational Testing Service maintains that these three areas " . . . comprise the major components of teacher education programs at many colleges and universities throughout the United States."[1]

The National Teacher Examinations are designed " . . . for college seniors who have substantially completed bachelor's degree programs of pre-service preparation for teaching."[2] The Educational Testing Service emphasizes that " . . . there is no claim that these tests encompass all of the factors involved in the preparation of teachers: In addition to the cognitive factors that NTE tests measure, there are non-cognitive variables . . . such as motivation, attitudes, and values . . . "[3] which may influence teacher behavior.

Figure 4-1 indicates the relationships among the NTE tests and scores which are discussed in this chapter.

The National Teacher Examinations include two major types of examinations: (I)[4] the Common Examinations and (II) the Teaching Area Examinations.

---

[1] NTE Technical Handbook, Educational Testing Service, Princeton, 1965, p. 5.

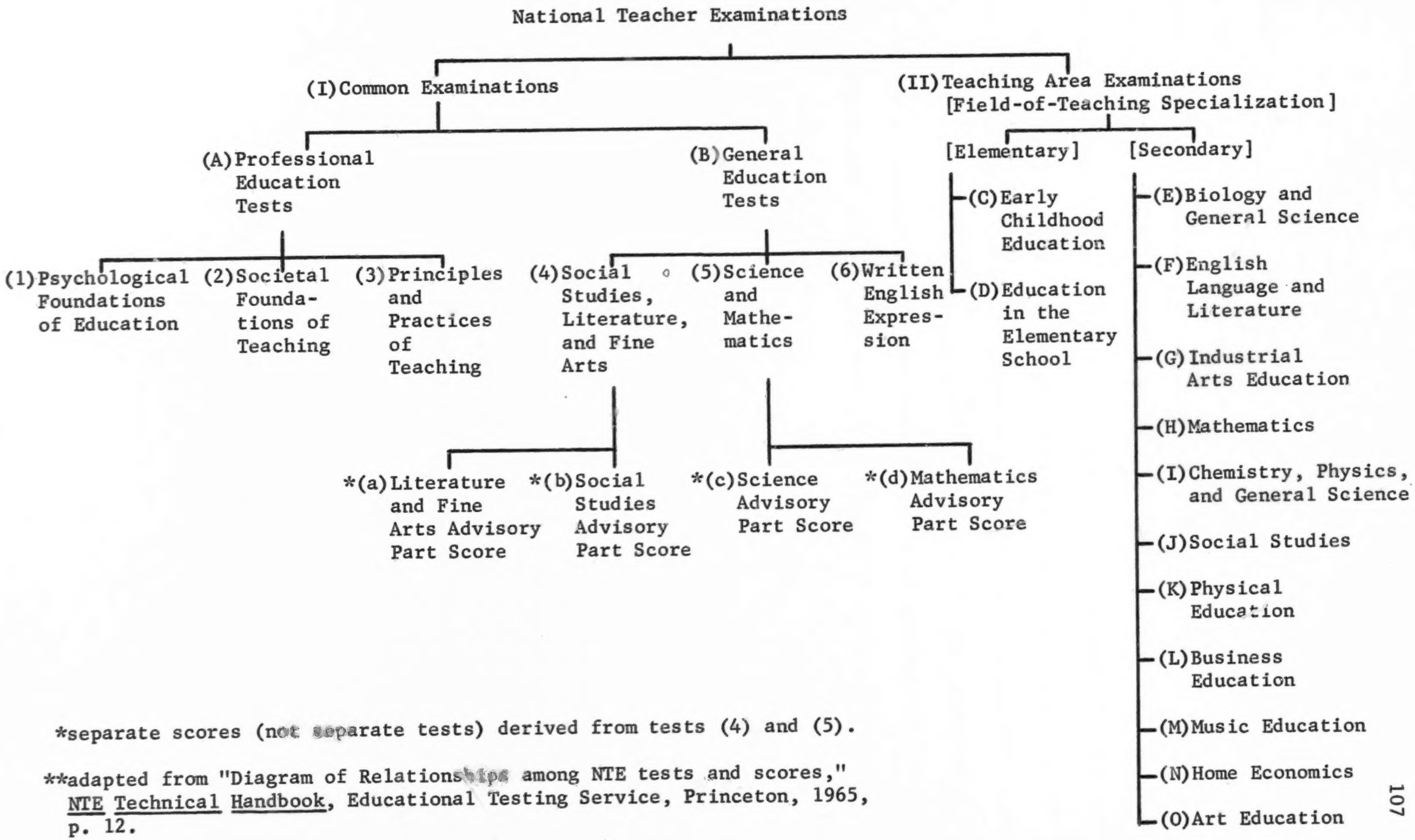
[2] Loc. cit.

[3] Ibid., p. 5-6

[4] The roman and arabic letters and numerals refer to those in Figure 4.1.

Figure 4-1

Relationships Among NTE Tests and Scores**


National Teacher Examinations
(I) Common Examinations
(II) Teaching Area Examinations [Field-of-Teaching Specialization]
(A) Professional Education Tests
(B) General Education Tests
[Elementary]
[Secondary]
(1) Psychological Foundations of Education
(2) Societal Foundations of Teaching
(3) Principles and Practices of Teaching
(4) Social Studies, Literature, and Fine Arts
(5) Science and Mathematics
(6) Written English Expression
(C) Early Childhood Education
(D) Education in the Elementary School
(E) Biology and General Science
(F) English Language and Literature
(G) Industrial Arts Education
(H) Mathematics
(I) Chemistry, Physics, and General Science
(J) Social Studies
(K) Physical Education
(L) Business Education
(M) Music Education
(N) Home Economics
(O) Art Education
*(a) Literature and Fine Arts Advisory Part Score
*(b) Social Studies Advisory Part Score
*(c) Science Advisory Part Score
*(d) Mathematics Advisory Part Score

*separate scores (not separate tests) derived from tests (4) and (5).

**adapted from "Diagram of Relationships among NTE tests and scores," NTE Technical Handbook, Educational Testing Service, Princeton, 1965, p. 12.

The Common Examinations, which are intended to " . . . measure knowledge and abilities in the domains of professional and general education which are common to all teachers regardless of their teaching fields,"[5] include (A) the Professional Education Tests and (B) the General Education Tests. The Professional Education Tests are: (1) Psychological Foundations of Education, (2) Societal Foundations of Education, and (3) Teaching Principles and Practices. There are also three General Education Tests: (4) Social Studies, Literature, and Fine Arts; (5) Science and Mathematics; and (6) Written English Expression.

The (II) Teaching Area Examinations are " . . . designed to measure the level of special preparation which candidates have made for the specific teaching positions indicated by the test titles. Two of these examinations, [(D)] Education in the Elementary School and [(C)] Early Childhood Education, are for use with candidates who plan to teach in the elementary grades. The remaining 11 tests [(E) through (O)] focus on various subject areas of secondary education."[6]

It can be seen, then, that all individuals to whom the National Teacher Examinations are administered take the Common Examinations (which include both the Professional Education Tests and the General Education Tests) regardless of their teaching level or field. It is only in the Teaching Area Examinations that different tests are used for different individuals according to their level or field of teaching.

---

[5] NTE Technical Handbook, op. cit., p. 8.

[6] Loc. cit.

Interpreting NTE scores

As a measure to assist the reader in interpreting the data to be reported in this chapter, the following information was selectively excerpted from the NTE Technical Handbook:[7]

> Scores on all NTE tests are reported as scaled scores rather than raw scores. The most comprehensive and reliable scores are reported as three-digit . . . numbers; more specific and moderately reliable scores are reported on a two-digit scale; and scores of limited significance for evaluating individual competence are reported on a single-digit scale. Each scale is devised so that a given score represents essentially the same level of test performance on different forms of the examinations taken on different testing dates.
>
> The categories of scaled scores yielded by the Common Examinations are as follows:
>
> . . . There is a two-digit scaled score for each of the six tests in the Common Examinations.[8] For all practical purposes, the two-digit scale can be considered to have a mean of 60 and a standard deviation of 10 for college seniors preparing to teach; it provides a distribution of scores which range approximately from 30 to 90. The use of the same score scale for all the tests of the Common Examinations makes possible the direct comparison of a candidate's performance across these tests, regardless of the number of items contained in a specific test.
>
> . . . Single-digit scaled scores, called Advisory Part Scores, are presented for important sub-areas of the Social Studies, Literature, and Fine Arts test and the Science and Mathematics test.[9] . . . The scale for these Part Scores is defined as having a mean of 6 and a standard deviation of 1; it provides a distribution of scores which range from 3 to 9.
>
> . . . Each of the 13 Teaching Area Examinations[10] is represented by a three-digit scaled score with the third digit always a zero. . . . The scale for each Teaching Area Examination is defined as having a mean of 600 and a standard deviation of 100; it provides a distribution of scores which range approximately from 300 to 900. . . . Since independent samples were used in scaling the Teaching Area Examinations, comparisons of performances across these tests cannot be made.

---

[7] NTE Technical Handbook, op. cit., p. 8, 10-11.

[8] Figure 4.1, (1) through (6).

[9] Figure 4.1, (a) through (d).

[10] Figure 4.1, (C) through (O).

The following technical information[11] about the National Teacher Examinations is also valuable as one attempts to interpret NTE data:

> Raw NTE test scores are converted to scaled scores by means of linear equations. Consequently, the shape of the scaled score distributions is substantially similar to that of the raw score distributions.
>
> When a new addition of the NTE is introduced, it is equated statistically to previous editions of the examinations. . . . This comparability applies to all editions of the Common Examinations . . . , but only to those editions of Teaching Area Examinations published after February 1964.[12]

Source of data

All data on National Teacher Examinations scores reported herein were extracted from the "National Teachers Examinations--Report of Scores" prepared by the Educational Testing Service.

The practice of administering the National Teacher Examinations to College of Education students has prevailed at the University of Hawaii for a number of years. The examinations are usually administered within several months of the date on which the student is expected to complete the requirements for the Bachelor of Education degree and every student is expected to submit to the NTE.

Since it was impossible to locate the Report of Scores for one of the 96 Ford graduates and for five of the 93 regular graduates, the data presented in this chapter are based on analyses of the Report of Scores of 183[13] of the 189 "successful" graduates[14] of the two programs.

---

[11] NTE Technical Handbook, op. cit., p. 11.

[12] All Teaching Area Examination scores reported in this chapter are based on examinations published after February, 1964.

[13] All data reported in this chapter, then, are based on the following Ns:

F15A=78	R15A=64
F15B=17	R15B=24
F15 =95	R15 =88

[14] See footnote 2 in Chapter 2.

Comparison in terms of stratification variables

Since data pertaining to the (Ford and regular) elementary students are presented separately from those pertaining to the secondary students,[15] the two elementary groups[16] and the two secondary groups[17] were compared in terms of the six stratification variables.[18]

The chi square[19] data in Table 4.1 reveal that the elementary groups do not differ significantly on any of the stratification variables. The same is true for the secondary groups (Table 4.2).

---

[15] Data pertaining to the combined groups (F15 and R15) are also presented for the benefit of the reader who prefers to view each group (Ford and regular) as a whole. See footnote 11 in Chapter 2.

[16] F15A and R15A.

[17] F15B and R15B.

[18] The stratification variables and categories are described in detail in Chapter 1.

[19] The procedures employed in the computation of chi square are described in the appendix.

Table 4.1

Distribution of Two Groups of Students on Six Stratification Variables

		Category												
Variable	Group	A	B	C	D	E	F	G	H	I	J	Z	Chi Square	p
OP	F15A	0	6	12	13	16	11	16	4	0	0		1.01	.99<.98
	R15A	0	6	9	8	16	12	10	3	0	0			
CS	F15A	59	10	6	0	1							1.04	.70<.50
	R15A	37	16	9	1	0								
SS	F15A	6	13	11	13	35							1.03	.95<.90
	R15A	3	7	5	15	34								
LS	F15A	71	7										.08	.80<.70
	R15A	60	4											
TS	F15A	66	12										.06	.90<.80
	R15A	56	8											
S	F15A	0	78											
	R15A	0	64											

Table 4.2

Distribution of Two Groups of Students on Six Stratification Variables

		Category												
Variable	Group	A	B	C	D	E	F	G	H	I	J	Z	Chi Square	p
OP	F15B	2	1	3	0	5	5	1	0	0	0		1.29	.30<.20
	R15B	0	2	3	9	5	1	4	0	0	0			
CS	F15B	13	0	3	0	0							.14	.80<.70
	R15B	17	4	3	0	0								
SS	F15B	0	0	5	3	9							1.15	.70<.50
	R15B	2	4	7	7	4								
LS	F15B	16	1										.31	.70<.50
	R15B	20	4											
TS	F15B	17	0										1.53	.30<.20
	R15B	20	4											
S	F15B	0	17										.82	.50<.30
	R15B	3	21											

Common Examinations--General Education Tests

Comparison of scores

The three General Education Tests[20] which are administered to all individuals who sit the National Teacher Examinations are: Social Studies, Literature, and Fine Arts; Science and Mathematics; and Written English Expression. Table 4.3 indicates the mean scores of each group on these tests and the probability of the differences between the means for comparable groups.

Table 4.3

Mean Score of Six Groups of Students on Three NTE General Education Tests

General Education Tests	F15A	R15A	p	F15B	R15B	p	F15	R15	p
Social Studies, Literature and Fine Arts	60.1	56.9	.01<.001	64.6	60.7	.20<.10	60.9	57.9	.01<.001
Science and Mathematics	64.7	62.2	.05<.02	67.9	64.0	.20<.10	65.3	62.7	.05<.02
Written English Expression	62.6	60.3	.10<.05	64.9	62.5	.30<.20	63.0	60.9	.10<.05

It can be observed in Table 4.3 that the mean score of the Ford elementary students on each of the General Education Tests exceeds that of their regular counterparts. In two instances--Social Studies, Literature, and Fine Arts; and

---

[20] See Figure 4.1, (1) through (3).

Science and Mathematics--the differences between the mean scores are significant.[21]

Although the mean scores of the Ford secondary students exceed those of the regular secondary students on all three General Education Tests, the differences are non-significant.[22]

Advisory part scores

Two Advisory Part Scores[23] are reported for Social Studies, Literature, and Fine Arts[24] and two for Science and Mathematics.[25] There are no Advisory Part Scores reported for Written English Expression.

The mean Advisory Part Score of each group and the probability of the difference between the means are indicated in Table 4.4

Table 4.4 reveals that the mean Advisory Part Scores of the Ford elementary students exceed those of their regular counterparts in every instance. The differences are statistically significant[26] for Literature and Fine Arts and Mathematics but not so for Social Studies and Science.

---

[21] That is, $p < .05$.

[22] That is $p > .05$. It should be noted, however, that the magnitude of the differences between the mean scores of the Ford and regular secondary students are, in some instances, equal to or greater than the magnitude of the differences between comparable means of the Ford and regular elementary students. The smaller Ns (see footnote 13) and, in some instances, the greater variability of the scores of the secondary students contributed to non-significant *t*s.

[23] See Figure 4.1, (a) through (d).

[24] One for Literature and Fine Arts and one for Social Studies.

[25] One for Science and one for Mathematics.

[26] That is, $p < .05$.

Table 4.4

Mean Advisory Part Scores of Six Groups of Students on Two NTE General Education Tests

General Education Test	Advisory Part Score	F15A	R15A	p	F15B	R15B	p	F15	R15	p
Social Studies, Literature, and Fine Arts	Literature and Fine Arts	6.0	5.6	$.01<.001$	6.6	6.2	$.20<.10$	6.1	5.8	$.02<.01$
	Social Studies	6.0	5.9	$.50<.40$	6.0	6.1	$.70<.60$	6.0	5.9	$.40<.30$
Science and Mathematics	Science	6.4	6.2	$.20<.10$	6.6	6.3	$.40<.30$	6.5	6.2	$.05<.02$
	Mathematics	6.6	6.2	$.01<.001$	7.0	6.5	$.10<.05$	6.6	6.3	$.02<.01$
(Written English Expression)*										

*There are no Advisory Part Scores for this test.

The Ford secondary students attained higher mean Advisory Part Scores for Literature and Fine Arts, Science, and Mathematics than did their regular peers. The converse was true for Social Studies. However, none of the differences between the Ford and regular secondary students are significant.[27]

Social studies, literature, and fine arts

The Ford elementary students, it will be recalled, attained a mean score significantly higher than that of their regular counterparts on Social Studies, Literature, and Fine Arts.[28] The data in Table 4.4 suggest that the relative advantage of the Ford students resided more in the area of literature and fine arts than in the area of social studies.

In an earlier chapter it was indicated that the Ford elementary students completed, on the average, 8.3 more semester hours[29] of English[30] than did the regular elementary students. The Ford elementary students also exceeded their regular peers in average number of semester hours of art completed.[31]

The general education program formulated for the Ford (elementary and secondary) students prescribed 12 semester hours of social science courses.[32]

---

[27] See footnote 22.

[28] See Table 4.3

[29] See Table 2.3

[30] English includes, but is not limited to, literature. See footnote 48.

[31] The difference was 2.6 semester hours. See Table 2.13.

[32] Courses titled as follows were considered "social science courses" for the purpose of this discussion: "Anthropology," "Economics," "Geography," "Political Science" (formerly "Government"), "Psychology," "Sociology," and "Social Sciences." The University of Hawaii Bulletin 45:49, May, 1966, includes "History" among the "Humanities." The general education program for the Ford students (elementary and secondary) prescribed six semester hours of history. The regular students (elementary and secondary) were expected to complete nine semester hours of history to meet the requirements of their general education program. The reader who prefers to view history as a social science should add six or nine semester hours, as appropriate, to the social science course requirements cited.

This requirement did not differ markedly from that for the regular elementary students (15 semester hours[33]). Although the average number of semester hours of social science courses completed by each group was not determined, it seems reasonable to assume that the difference between the Ford and regular elementary students was minimal.

In general, then, it appears that the differences between the mean scores of the Ford and regular elementary students on Social Studies, Literature, and Fine Arts and the associated Advisory Part Scores tend to parallel differences in their undergraduate programs.

The differences between the mean scores of the Ford and regular secondary students on Social Studies, Literature, and Fine Arts and the associated Advisory Part Scores are in every instance non-significant.

Although the Ford secondary students completed, on the average, more semester hours of English[34] than their regular counterparts, the difference was smaller than that for the elementary students.[35] The difference between the Ford and regular secondary students in average number of semester hours of art completed is only slightly more than that between the Ford and regular elementary students.[36]

The general education program of the regular secondary students prescribed 12 semester hours[37] of social science courses[38] as did the general education program of the Ford secondary students. It seems reasonable, then, to assume[39] that the difference between the F and regular secondary students in average number of semester hours of social science courses completed was minimal.

---

[33] This number excludes Psychology 472. See footnote 37 in Chapter 2.

[34] See Table 2.3

[35] The difference was 8.3 semester hours for the elementary students compared to 5.3 semester hours for the secondary students.

[36] 2.8 semester hours for the secondary students and 2.6 semester hours for the elementary students. See Table 2.13.

[37] See footnote 33.

[38] See footnote 32.

Again, the mean scores[40] of the Ford and regular secondary students on Social Studies, Literature, and Fine Arts and the associated Advisory Part Scores seem to mirror, to some extent at least, their undergraduate programs.[41]

Science and mathematics

It was indicated in Table 4.3 that the mean score of the Ford students on Science and Mathematics was significantly higher than that of their regular counterparts. The data in Table 4.4 suggest that the relative strength of the Ford students resided more in mathematics than in science.

The (significantly) higher mean Advisory Part Score on Mathematics attained by the Ford elementary students is not unexpected since they completed, on the average, 11.8 semester hours of mathematics compared to the 3.3 semester hours completed by their regular counterparts.[42]

---

[39] As indicated earlier, the average number of semester hours of social science courses completed by each group was not determined.

[40] It is possible, of course, that the relative number of secondary teaching majors in the two groups served to distort the mean scores. In the case of Social Studies, Literature, and Fine Arts, however, it appears that any distortion would be minimal because the number of Ford secondary students (2) who elected the Social Studies Teaching Area Examination compares well with the number of regular secondary students (3) who did likewise. The same thing is true for English (Ford: 8 and regular: 9) and art (Ford: 1 and regular: 2). See Table 4.10.

[41] In the foregoing discussion it is assumed that the knowledge which is incorporated in a discipline (or a group of disciplines) is acquired only through courses in that discipline (or group of disciplines), e.g., English is learned only in English courses, art is learned only in art courses, social science is learned only in social science courses, and so forth. This assumption is not, of course, wholly valid.

The 8-semester-hour science requirement in the general education program of the regular elementary students did not differ markedly from the 8-10 semester hours of science courses prescribed in the general education program of their Ford counterparts. The average number of semester hours of science courses completed by each group was not determined, but it seems reasonable that the difference between the Ford and regular elementary students was minimal.

The differences between the mean scores of the Ford and regular elementary students on Science and Mathematics and the associated Advisory Part Scores, then, seem to be consistent with differences in their undergraduate programs.

The difference between the Ford and regular secondary students in average number of semester hours of mathematics completed, although slightly less than that between the Ford and regular elementary students, was fairly large.[43]

The science requirement in the general education program of the Ford and regular secondary students did not differ markedly[44] and ordinarily it would seem reasonable to assume that the difference between the Ford and regular secondary students in average number of semester hours of science courses would be minimal. However, the disparity in number of teaching majors in the two groups[45] would suggest that the average number of semester hours of science courses completed by the regular secondary students may have exceeded that of their Ford counterparts.[46]

---

[42] See Table 2.6.

[43] The difference was 8.5 semester hours for the elementary students compared to 6.4 semester hours for the secondary students. See Table 2.6.

[44] Eight semester hours for the regular secondary students and 8-10 semester hours for the Ford secondary students.

[45] Two regular secondary students elected the Biology and General Science Teaching Area Examination and one elected the Chemistry, Physics, and General Science Teaching Area Examination. In contrast, not one Ford secondary student elected either of the two Teaching Area Examinations in science.

In view of the foregoing it might be expected that the Ford secondary students would excel their regular counterparts on Mathematics while the converse would be true for Science. As indicated in Table 4.4, the mean Mathematics Advisory Part Score attained by the Ford secondary students was, indeed, higher than that of their regular peers (but not significantly so). The Ford secondary students also attained a mean Science Advisory Part Score which was higher (but not significantly so) than that of their regular counterparts--contrary to expectations.

Written English expression

The Ford elementary students, it will be recalled, completed 8.3 more semester hours[47] of English,[48] on the average, than did their regular peers. This difference is echoed in their scores on Written English Expression in that the Ford elementary students attained a higher, but not significantly higher, mean score than did the regular elementary students.

The 5.3 semester-hour advantage[47] of the Ford secondary students over the regular secondary students is also reflected in their mean scores[49] on Written English Expression but, again, the differences are non-significant.

---

[46] As indicated earlier, the average number of semester hours of science courses completed by each group was not determined.

[47] See Table 2.3.

[48] The relative emphasis given to written expression, literature, and other aspects of English is unknown.

[49] See footnote 40. Since the number of Ford secondary students (8) who selected the English Language and Literature Teaching Area Examination approximates the number of regular secondary students (9) who did likewise, distortion of the mean scores attributable to the relative number of teaching majors is probably minimal.

It is noteworthy, perhaps, that the mean scores of both the Ford and the regular students (elementary and secondary) on Written English Expression are higher than their mean scores on Social Studies, Literature, and Fine Arts.[50] In terms of relative strength, however, the data suggest that, for the elementary students at least, the advantage of the Ford students resides more in the area of English literature than in the area of written English expression.[51]

Comparison by level[52]

The mean score attained by the Ford secondary students exceeds that of the Ford elementary students on each of the three General Education Tests. The same is true for the Advisory Part Scores with but one exception.[53] This is not completely unexpected since, as undergraduates, the Ford secondary students completed an average of 7.2 more semester hours[54] of general education[55] than did the Ford elementary students.

The regular secondary students, it will be recalled, exceeded the regular elementary students in average number of semester hours of general education by an even greater margin--20.4 semester hours. It is not surprising, then, that of the regular elementary students on all three General Education Tests and on all four Advisory Part Scores.

---

[50] See Table 4.3

[51] There is a significant difference between the mean score of the Ford elementary students and that of the regular elementary students on Social Studies, Literature, and Fine Arts whereas the difference between the mean scores of the two groups on Written English Expression is non-significant. Moreover, the data in Table 4.4 suggest that the relative strength of the Ford elementary students resided more in the area of literature and fine arts than in the area of social studies.

[52] That is, elementary and secondary.

[53] The Ford elementary students attained a mean Social Studies Advisory Part Score of 6.0 as did the Ford secondary students.

[54] See Table 2.18.

[55] See footnote 1 in Chapter 2.

Again, then, there seems to be a rather close parallel between the students' scores on the General Education Tests and associated Advisory Part Scores and their undergraduate programs.

Comparison with normative data

An important question in reviewing the National Teacher Examinations data of both Ford and regular students concerns their level of attainment relative to a broader sample. An approach which seems appropriate to estimate relative performance is to assume that the mean score of each group is the score of a hypothetical "average" student from that group. The score of the "average" student from each group can be used to determine his percentile rank employing the normative data provided by the Educational Testing Service.[56] This procedure was employed in the preparation of Table 4.5.

Table 4.5

Percentile Rank of an "Average" Student from Each of Six Groups of Students on Three NTE General Education Tests

General Education Tests	F15A	R15A	F15B	R15B	F15	R15
Social Studies, Literature, and Fine Arts	50>60	40>50	70>75	50>60	50>60	40>50
Science and Mathematics	60>70	50>60	70>75	60	60>70	50>60
Written English Expression	60>70	50>60	60>70	60>70	60>70	50>60

---

[56] NTE Technical Handbook, op. cit., p. 21. The percentile ranks are based on a sample of 4,067 college seniors to whom the National Teacher Examinations were administered in December, 1964. The majority of the students in this study were administered the NTE a few months later in March, 1965. Thus, the students in this study are contemporaries of the students who comprise the group on which these normative data are based but are not themselves members of the norms group.

The score attained on each of the three General Education Tests by the "average" student from each group--Ford or regular, elementary or secondary--is, in every instance[57] but one,[58] above the 50 percentile rank. There are five instances in which the scores are in the 60 or 60 > 70 percentile ranks and two instances in which the scores are in the 70 > 75 percentile rank.

In general, then, it can be said that the performance of both the Ford and the regular students on the General Education Tests is, on the average, somewhat above average compared to the performance of the students included in the sample on which the normative data are based.[59]

Common Examination--Professional Education Tests

Comparison of scores

All individuals who sit the National Teacher Examinations are administered three Professional Education Tests: Psychological Foundations of Education, Societal Foundations of Education, and Principles and Practices of Teaching.[60] The mean scores of each group on these tests and the probability of the differences between the means for comparable groups are indicated in Table 4.6.

It can be seen that the mean scores of the regular students (elementary and secondary) on Societal Foundations of Education and Principles and Practices of Teaching are higher than those of their Ford counterparts. The difference between the mean scores of the elementary students is significant[61] but not so for the secondary students.

---

[57] That is, if the combined groups (R15 and F15) are disregarded. See footnote 15.

[58] The single exception is the score of the "average" regular secondary student on Social Studies, Literature, and Fine Arts which is in the 40 > 50 percentile rank.

[59] See footnote 56.

[60] See Figure 4.1, (4) through (6).

[61] That is, $p < .05$.

Table 4.6

Mean Score of Six Groups of Students on Three NTE
Professional Education Tests

Professional Education Tests	F15A	R15A	p	F15B	R15B	p	F15	R15	p
Psychological Foundations of Education	64.6	63.7	.50<.40	65.4	62.7	.30<.20	64.7	63.4	.30<.20
Societal Foundations of Education	57.6	60.5	.02<.01	60.1	62.0	.40<.30	58.1	60.9	.01<.001
Principles and Practices of Teaching	63.4	67.0	.01<.001	63.6	63.8	>.90	63.5	66.1	.02<.01

The Ford students (elementary and secondary) outscored their regular peers on Psychological Foundations of Education but the difference between the mean scores is non-significant in every instance.[62]

Psychological foundations of education

It will be recalled that the professional education program for the Ford students prescribed a five-semester-hour course in educational psychology.[63] The program of the regular students entailed a three-semester-hour course in educational psychology.[64] This difference in emphasis on educational psychology in the two programs may account for the higher (but not significantly higher) mean score on Psychological Foundations of Education attained by the Ford students.[65]

Societal foundations of education

The undergraduate program prescribed for the Ford students included no courses in societal foundations of education.[66] Similarly, no courses in societal foundations of education were included in the established undergraduate program for the regular students.[67] It is not unexpected, then, that the mean scores of both the Ford and the regular students (elementary and secondary) on Societal Foundations of Education are lower in every instance than their mean scores on the other two Professional Education Tests.

---

[62] See footnote 22.

[63] "Education I." See "Professional Education Courses" in Chapter 1.

[64] "Educational Psychology." See footnote 37 in Chapter 2.

[65] See footnote 41. The same thing can be said for education courses. It is impossible to assert that the psychological foundations of education are learned only in educational psychology courses, that the principles and practices of teaching are learned only in curriculum courses, and so forth.

[66] It appears that societal foundations of education were to be included in "Education III," a fifth-year course prescribed by the Professional Education Committee. See "Professional Education Courses" in Chapter 1.

[67] A course entitled "Philosophy of Education" was included in the fifth-year program of the regular students.

It will be recalled that the difference between the Ford and regular elementary students in average number of semester hours of education courses completed stands in distinct contrast to the relatively minimal difference between the Ford and regular secondary students.[68] This contrast seems to be reflected in their mean scores on Societal Foundations of Education[69] in that the difference between the means of the Ford and regular elementary students is larger than the difference between the means of the Ford and regular secondary students.[70]

It can be observed, too, that the mean score of the Ford secondary students on Societal Foundations of Education exceeds that of the Ford elementary students[71] even though the latter completed more semester hours of education courses, on the average, than the former.[72] The same is true for the regular students.[73] Since the secondary students completed more general education courses, on the average, than did the elementary students,[74] it seems at least possible that their mean scores on Societal Foundations of Education may to some degree correspond to differences between their undergraduate programs in relative emphasis on general education.

---

[68] The regular secondary students averaged 3.8 semester hours more of education courses than the Ford secondary students. The regular elementary students, in contrast, averaged 16.2 more semester hours of education courses than the Ford elementary students. See Table 2.22.

[69] Even though none of the education courses were in the societal foundations of education. See footnote 65.

[70] The difference between the mean scores of the elementary students is significant but the difference between the mean scores of the secondary students is not.

[71] The mean scores of the Ford secondary students also exceed those of the Ford elementary students on the other two Professional Education Tests but the difference in each instance is minimal.

[72] The Ford elementary students completed an average of 2.2 more semester hours of education courses than the Ford secondary students. See Table 2.22.

[73] The regular elementary students averaged 14.6 more semester hours of education courses than the regular secondary students. See Table 2.22.

Principles and practices of teaching

In examining the mean scores on Principles and Practices of Teaching it can be seen that the largest (and most likely significant) difference between the Ford and regular elementary students is here as is the least (and most likely non-significant) difference between the Ford and regular secondary students.

The difference between the Ford and regular elementary students and the difference between the Ford and regular secondary students are consistent with undergraduate program differences.[75] The relatively minimal difference between the Ford elementary and Ford secondary students and the relatively large difference between the regular elementary and regular secondary students also correspond to program differences.[76]

Comparison with normative data

The percentile rank of an "average" student[77] from each group on the three Professional Education Tests is indicated in Table 4.7.

---

[74] The Ford and regular secondary students completed 7.2 and 20.4 more semester hours of general education courses, respectively, than the Ford and regular elementary students. See Table 2.18.

[75] See footnote 68.

[76] The Ford elementary students averaged only 2.2 more semester hours of education courses than the Ford secondary students. The regular elementary students, in contrast, averaged 14.6 more semester hours of education courses than the regular secondary students. See Table 2.22.

[77] See "Comparison with normative data" in the preceding section ("Common Examinations--General Education Tests").

Table 4.7

Percentile Rank of an "Average" Student from Each of Six Groups of Students on Three NTE Professional Education Tests

Professional Education Tests	F15A	R15A	F15B	R15B	F15	R15
Psychological Foundations of Education	70>75	60>70	70>75	60>70	70>75	60>70
Societal Foundations of Education	40>50	50>60	50>60	50>60	40>50	50>60
Principles and Practices of Teaching	60>70	75	60>70	60>70	60>70	70>75

The score attained on each of the three Professional Education Tests by the "average" student from each group is, in every instance[78] but one,[79] above the 50 percentile rank. There are five instances in which the scores are in the 60 > 70 percentile rank and three instances in which the scores are in the 70 > 75 or 75 percentile ranks.

These data indicate that the performance of both the Ford and the regular students on the Professional Education Tests is, on the average, well above average compared to that of the students in the norms group.[80]

Teaching Area Examinations--Elementary

Comparison of scores

The elementary student ordinarily elects one of two Teaching Area Examinations: Early Childhood Education or Education in the Elementary School.[81] The mean scores of the Ford and regular elementary students on these two (elementary) Teaching Area Examinations and the probability of the difference between the means on the latter are indicated in Table 4.8.

---

[78] That is, if the combined groups (R15 and F15) are disregarded. See footnote 15.

[79] The single exception is the score of the "average" Ford elementary student on Societal Foundations of Education which is in the 40 > 50 percentile rank.

[80] See footnote 56.

[81] See Figure 4.1, (C) and (D).

Table 4.8

Mean Score of Elementary Students on NTE
Teaching Area Examinations

Teaching Area Examination	F15A		R15A		p
	N	Mean Score	N	Mean Score	
Early Childhood Education	1	490.0	9	680.0	--
Education in the Elementary School	77	648.8	55	671.5	.02<.01

The data in Table 4.8 reveal that the nine regular elementary students who elected the Early Childhood Education Teaching Area Examination attained a mean score of 680.0. The lone Ford elementary student who elected the same examination attained a score of 490.0. Any statistical comparison is, of course, virtually meaningless.

Again, the marked difference between the Ford and regular elementary students in average number of semester hour of education courses completed[82] seems to be mirrored in their mean scores on the Education in the Elementary School Teaching Area Examination. The difference between the mean score of the regular elementary students and that of their Ford counterparts is statistically significant.

Comparison with normative data

The percentile rank of an "average" student[83] from the group[84] which elected each (elementary) Teaching Area Examination is indicated in Table 4.9.

---

[82] See footnote 68.

[83] See footnote 77.

[84] If there is only one student in the group, the percentile rank of that student is indicated.

Table 4.9

Percentile Rank of an "Average" Student from the Group Which Elected each (Elementary) Teaching Area Examination

Teaching Area Examination	F15A N	F15A Percentile Rank	R15A N	R15A Percentile Rank
Early Childhood Education	1	5	9	75
Education in the Elementary School	77	50>60	55	60>70

The performance of the Ford elementary students on the (elementary) Teaching Area Examinations is, on the average, slightly above average as compared to that of the students in the norms group.[85] The performance of the regular elementary students on the same examination is, on the average, well above average.

Teaching Area Examinations--Secondary

Comparison of scores

The secondary student ordinarily elects one of the 11 Teaching Area Examinations[86] which represent most of the subject areas usually included in the secondary school program.[87] The mean scores of the Ford and regular secondary students on the (secondary) Teaching Area Examinations and the probability of the difference between the means (as appropriate) are indicated in Table 4.10.

---

[85] NTE Technical Handbook, op. cit., p. 22. See footnote 56.

[86] The student elects the Teaching Area Examination in the subject area in which he considers himself most competent (usually, but not always, his teaching major). In the event that there is no Teaching Area Examination in that subject area (e.g., speech, foreign language), he elects the Teaching Area Examination in his next-most-competent subject area.

[87] See Figure 4.1, (E) through (O).

Table 4.10

Mean Score of Secondary Students on NTE
Teaching Area Examinations

Teaching Area Examination	F15B		R15B		p
	N	Mean Score	N	Mean Score	
Biology and General Science	0		2	680.0	
English Language and Literature	8	588.7	9	602.2	$.70<.60$
Industrial Arts Education	0		1	670.0	
Mathematics	5	660.0	4	695.0	$.40<.30$
Chemistry, Physics and General Science	0		1	660.0	
Social Studies	2	635.0	3	586.7	$.20<.10$
Physical Education	0		1	700.0	
Business Education	1	570.0	1	610.0	
Music Education	0		0		
Home Economics Education	0		0		
Art Education	1	560.0	2	665.0	

The differences between the mean scores of the Ford and regular secondary students on three of the Teaching Area Examinations--English Language and Literature, Mathematics, and Social Studies--were non-significant in each instance. This is not unexpected as these students presumably had elected either English, mathematics, or social studies as their teaching major. Therefore, differences in the requirements of their general education programs were probably offset by the additional courses that they completed to fulfill their teaching major requirements.

The number of individuals who elected each of the other (secondary) Teaching Area Examinations is minimal and statistical comparisons are by and large meaningless.

The relative number of Ford and regular secondary students who elected each Teaching Area Examination does not appear to have been affected by differential undergraduate program requirements. It might have been expected, for example, that proportionably more Ford secondary students would have elected mathematics as their teaching major since their undergraduate general education program required considerably more semester hours of mathematics[88] than did the undergraduate general education program of the regular secondary students. The same might have been expected for English. However, as indicated in Table 4.10, the number of Ford and regular students who elected each Teaching Area Examination is fairly comparable.

Comparison with normative data

The percentile rank of an "average" student[89] from the group[90] which elected each (secondary) Teaching Area Examination is indicated in Table 4.11.

The data in Table 4.11 reveal that the performance of the Ford and regular students[91] varied rather widely from subject area to subject area.[92]

The performance of both the Ford and the regular secondary students who elected the Mathematics Teaching Area Examination is, on the average, far above average. In contrast, the performance of both the Ford and the regular secondary students who elected the English Language and Literature Teaching Area Examination is, on the average, considerably below average.

---

[88] See "Mathematics" in Chapter 2.

[89] See footnote 77.

[90] See footnote 84.

[91] Compared to that of the students in the norms group. See footnote 85.

[92] The variability is probably exaggerated by the small number of individual in most of the groups.

The number of individuals who elected the other Teaching Area Examinations is so small that comparisons are not meaningful.

The National Teacher Examinations in Perspective

In the preceding pages data pertaining to the performance of the Ford and regular students on the National Teacher Examinations were presented and discussed in detail.

The mean scores of the Ford elementary students were significantly higher than those of their regular counterparts on two of the three General Education Tests: Social Studies, Literature, and Fine Arts; and Science and Mathematics. The Advisory Part Score data seemed to indicate that the strength of the Ford elementary students resided more in the areas of literature and fine arts and mathematics than in the areas of social studies and science. There was no (significant) difference between the mean scores of the Ford and regular elementary students on the third General Education Test: Written English Expression.

The differences between the mean scores of the Ford and regular secondary students on the three General Education Tests were non-significant in every instance. The differences between their mean Advisory Part Scores were also non-significant.

The performance of both the Ford and the regular students on the General Education Tests was generally above average when compared to the performance of the norms group.

The regular elementary students attained mean scores significantly higher than those of their Ford peers on two of the three Professional Education Tests--Societal Foundations of Education and Principles and Practices of Teaching--but there was no (significant) difference between the Ford and regular elementary students on the third Professional Education Test: Psychological Foundations of Education.

Again the differences between the mean scores of the Ford and regular secondary students on the three Professional Education Tests were non-significant.

The performance of both the Ford and the regular students on the Professional Education Tests was well above average compared to the performance of the students in the norms group.

The regular elementary students outscored their Ford counterparts on the (elementary) Teaching Area Examinations. The difference between the mean scores of the two groups on the Education in the Elementary School Teaching Area Examination was significant.

The performance of the Ford elementary students on the (elementary) Teaching Area Examinations was above average compared to the norms group. The performance of the regular elementary students on the same Teaching Area Examinations was well above average.

The mean scores of the Ford and regular secondary students on the (secondary) Teaching Area Examinations varied markedly. There was not one instance in which the difference between the mean scores of the two groups was significant.

The performance of both the Ford and the regular secondary students on the Mathematics Teaching Area Examination was considerably above average compared to that of the norms group. Conversely, the performance of both the Ford and the regular students on the English Language and Literature Teaching Area Examination was somewhat below average. The number of individuals who elected the other (secondary) Teaching Area Examinations was small and their performance was varied.

In reviewing the scores of the Ford and regular students on the General Education Tests (and associated Advisory Part Scores) and the Professional Education

Tests the most striking element was the almost consistent fashion in which variation in the scores seemed to echo variations in the undergraduate programs of the students.

CHAPTER 5

INTERN TEACHING

Introduction

Intern teaching program

The program prescribed for the Ford graduates[1] by the Professional Education Committee and the established program for regular graduates each prescribed that intern teaching be accomplished during the fifth (graduate) year.[2] In contrast to the student teaching practicum which represented one of the major differences between the Ford and regular programs, the intern teaching experience was to be the same for both Ford and regular graduates.

The intern teacher was appointed[3] to a full-time teaching position in a public school for one semester. Since the duties and responsibilities of the intern teacher were comparable to those of any other classroom teacher, he was compensated in an amount equal to that of other public school teachers with equal preparation and experience.[4]

---

[1] In the preceding chapters the subjects of this study were referred to as "students" to indicate undergraduate status. In this chapter they will be referred to as "graduates" to indicate graduate (fifth year) status.

[2] The graduate who completed the fifth year program was awarded a Five-Year Diploma. The fifth year programs prescribed for the Ford and regular graduates are described in Chapter 1.

[3] The appointment was tendered by the Hawaii State Department of Education on the recommendation of the College of Education.

[4] The Hawaii State Department of Education salary schedule was employed in determining the salary of the intern teacher.

Although the classroom responsibilities of the intern teacher were essentially similar to those of any other teacher in the school, he was under the immediate supervision of an "intern supervisor." The intern supervisor was an experienced teacher employed by the Hawaii State Department of Education[5] but selected by the College of Education[6] to supervise intern teachers.[7] The University of Hawaii afforded the intern supervisor a supplementary salary[8] to compensate him for the additional duties and responsbilities entailed in the supervision of intern teachers.

College of Education surveillance of the intern teaching program was maintained by a staff of "coordinators"[9] who were College of Education faculty members. In short, then, the intern program[10] seemed to be designed to enable the beginning (intern) teacher to assume all the duties and responsibilities of a full-fledged teacher under the supervision of an experienced teacher (intern supervisor).

Methods of reporting assessment

There were two methods employed in officially reporting the intern supervisor's assessment of an intern teacher: (1) the assignment of a letter grade, i.e., A, B,

---

[5] See footnote 5 in Chapter 3.

[6] With, of course, the approval of the school administration and the agreement of the teacher.

[7] An intern supervisor ordinarily supervised three intern teachers.

[8] In addition to his regular salary as a teacher which was paid by the Hawaii State Department of Education.

[9] A more appropriate designation of these individuals would probably be "clinial professors."

[10] The intern program was subsequently supplanted by the First Year Teacher Development program which differs somewhat in concept.

C, D, or F[11] and (2) the completion of an evaluation form[12] which involved the assignment of ratings on a number of variables. The latter will be discussed in this chapter.

Source of data

All data on assessments of intern teaching reported herein were extracted from the "Teacher Evaluation Record" (elementary) or the "Evaluation of Secondary Interns" (secondary) for each "successful" graduate[13] who successfully completed intern teaching.[14]

Since it was impossible to locate the evaluation forms for two of the regular graduates,[15] the data presented in this chapter are based on an analysis of the evaluation forms of 115 of the 117 individuals who successfully completed intern teaching.[16]

Assumptions about rater error

The earlier discussion of possible differential rater error in the student teaching data[17] is equally applicable to the intern teaching data.

---

[11] Intern teaching afforded the student 14 semester hours credit.

[12] The "Teacher Evaluation Record" (elementary) or the "Evaluation of Secondary Interns" (secondary).

[13] See footnote 2 in Chapter 2.

[14] It is important to note that 25 of the Ford elementary graduates and 24 of the regular elementary graduates did not assume intern teaching positions. Similarly six of the Ford secondary graduates and 12 of the regular secondary graduates did not engage in intern teaching. Moreover, of the 122 graduates who assumed intern teaching positions, four of the Ford elementary graduates and one of the regular elementary graduates either failed or withdrew before the end of the semester. Thus 117 graduates successfully completed intern teaching.

[15] One elementary and one secondary.

[16] All data reported in this chapter, then, are based on the following Ns:

F15A=50	R15A=42
F15B=11	R15B=12

[17] See "Assumptions about rater error" in Chapter 3.

In the absence of evidence to the contrary, it is assumed in the ensuing discussion, as it was in the chapter on student teaching, that any rater error is not differential.

Intern Teaching--Elementary

Instrument

The instrument employed in the assessment of the intern teaching of both the Ford and the regular elementary graduates was the "Teacher Evaluation Record"[18] which provided for a rating on each of the following variables:[19]

EIT 1 Shows a sincere interest in boys and girls and accepts them as they are.

EIT 2 Demonstrates ability to establish relationships with children which lead to a cooperative teaching-learning situation.

EIT 3 Plans learning experiences in accordance with principles of child growth and development.

EIT 4 Plans learning experiences in accordance with sound principles of the learning process.

EIT 5 Draws on scholarly background to enrich children's learning.

EIT 6 Explores and utilizes available educational resources of the community in the curriculum.

EIT 7 Utilizes effective instructional procedures.

EIT 8 Promotes growth in the appreciations, attitudes, and abilities required for intelligent participation in a democratic society.

EIT 9 Utilizes adequate evaluation procedures.

EIT 10 Is capable of mature objectivity in pupil and self evaluation.

EIT 11 Demonstrates ability to use collect, interpret, and use pertinent information about each pupil.

EIT 12 Demonstrates ability to use appropriate counseling techniques and resources.

---

[18] This is the same instrument as that employed in the assessment of the student teaching of the Ford and regular elementary students.

[19] The designation which precedes each variable (e.g., EIT 1) has been added for convenience in referring to the variables.

EIT 13 Seeks parent cooperation and participation in matters concerning their children and the school.

EIT 14 Evidences vitality commensurate with the work load.

EIT 15 Assumes responsible and cooperative role as staff member.

EIT 16 Demonstrates desirable professional attitudes, leading to continuous growth in overall competency.

The instrument required the intern supervisor to assess (rate) the intern teacher on each variable as "Outstanding," "Strong," "Average," "Below Average," or "Unsatisfactory."[20] Although the scale incorporated five categories, the intern supervisors rarely employed the "Unsatisfactory" category.[21] Consequently, the mean ratings are higher and the standard deviations are smaller than would ordinarily be expected.[22]

Comparison of ratings

Table 5.1 indicates the mean rating of each group on each variable and the probability of the difference between the two means for each variable.

It can be seen in Table 5.1 that the differences between the mean ratings of the Ford and regular elementary intern teachers are without exception small[23] and non-significant.[24]

---

[20] The values assigned to each rating for the purpose of statistical analysis were: 5 ("Outstanding"), 4 ("Strong"), 3 ("Average"), 2 ("Below Average"), and 1 ("Unsatisfactory").

[21] The "Unsatisfactory" category was used in only once in a total of 1472 ratings (16 variables x 92 intern teachers). The remarks in footnote 17 in Chapter 3 are equally applicable to intern teaching.

[22] Assuming a symmetrical distribution across a five category scale.

[23] The differences never exceed .2 and are, in most instances, .1 or less.

[24] That is, $p > .05$.

Table 5.1

Mean Rating of Two Groups of Elementary Intern Teachers on Sixteen Variables

Variable	F15A	R15A	P
EIT 1	4.2	4.1	.60<.50
EIT 2	4.0	3.9	.60<.50
EIT 3	3.9	3.8	.60<.50
EIT 4	3.7	3.8	.60<.50
EIT 5	3.9	3.8	.60<.50
EIT 6	3.7	3.7	
EIT 7	3.8	3.7	.60<.50
EIT 8	3.9	3.8	.60<.50
EIT 9	3.7	3.6	.50<.40
EIT 10	3.8	4.0	.30<.20
EIT 11	3.6	3.7	.50<.40
EIT 12	3.7	3.6	.60<.50
EIT 13	3.7	3.7	
EIT 14	4.1	3.9	.30<.20
EIT 15	4.1	3.9	.20<.10
EIT 16	4.1	4.0	.60<.50

A comparative review of Tables 3.2 and 5.1 reveals that the mean ratings of the regular intern teachers do not vary markedly[25] from their mean ratings as student teachers.[26] The mean ratings of the Ford intern teachers, in contrast, are, with but one exception,[27] higher than their mean ratings as student teachers.[28] Thus the rather marked difference between the Ford and regular graduates during student teaching[29] seems to have been obliterated by the end of the semester during which intern teaching was accomplished.[30]

In the absence of data which would serve to account for the apparent improvement in the performance of the Ford intern teachers[31] the only recourse is to speculation. There have been informal (subjective) reports that in general the Ford graduates seemed to be rather adept in acquiring insight into the character of their deficiencies and that they were energetic in endeavoring to overcome these shortcomings. In addition, they seemed to reveal an unusually intense desire to achieve.[32] Unfortunately, there are no data available which would either corroborate or refute the foregoing.

---

[25] The regular graduates' mean intern teaching ratings are only .04 lower, on the average, than their mean student teaching ratings.

[26] This statement and subsequent statements of the same nature are based on the assumption that the mean student teaching ratings of those graduates who engaged in intern teaching do not differ from the mean student teaching ratings of those graduates who did not engage in intern teaching. See footnote 14.

[27] EIT 6.

[28] The Ford graduates' mean intern teaching ratings are .25 higher, on the average, than their mean student teaching ratings.

[29] There were statistically significant differences between the Ford and regular student teachers on 8 of the sixteen variables on which they were rated. See Table 3.2.

[30] The rating of intern teachers was ordinarily accomplished at the end of the semester.

[31] That is, improvement over their performance as student teachers.

In any event, the data in Table 3.1 indicate rather dramatically that for whatever reason the intern supervisors perceived no (significant) difference between the performance of the Ford intern teachers and that of the regular intern teachers.

Intern Teaching--Secondary

Instrument

The instrument employed in the assessment of the intern teaching of both the Ford and the regular secondary graduates was the "Evaluation of Secondary Interns" which provided for a rating on each of the following variables:[33]

SIT	1	Personal qualifications: appearance, poise, health, emotional control, disposition, initiative, resourcefulness, enthusiasm, responsibility.
SIT	2	Voice and speech: total quality, audibility, distinctness, fluency, idiomatic usage, grammar, pronunciation, appropriate vocabulary.
SIT	3	Rapport with students: acceptance of students, respect for students, ability to inspire confidence.
SIT	4	Control and discipline: encouragement of self-discipline, direction of students in effective use of time, ability to maintain atmosphere conducive to learning, consistency in maintaining desirable order.
SIT	5	Planning and organizing: understanding of objectives by pupils and teachers through long term and weekly and/or daily plans, thoroughness of planning, flexibility and adaptability, ability to anticipate needs and emergencies.
SIT	6	Classroom management: accuracy and promptness in handling classroom routines and administrative requests, proper care of room and equipment.

---

[32] See the last two paragraphs of "Evaluation of teacher progress" in Chapter 3.

[33] The designation which precedes each variable (e.g., SIT 1) has been added for convenience in referring to the variables.

SIT 7 Motivating students: ability to create a desire in the students to learn and do their best.

SIT 8 Knowledge of subject taught: command and skill in use of subject matter.

SIT 9 Teaching skills: effective use of aids, activities, techniques and evaluation procedures suited to purposes, interests, and abilities of group.

SIT 10 Professional attitude: receptivity to suggestions from supervision, acceptance of ethics and obligations of the profession.

SIT 11 Self-evaluation: ability to evaluate self realistically and take appropriate action, use of appropriate tools and techniques of evaluation, desire for self-improvement.

The instrument required the intern supervisor to assess (rate) the intern teacher on each variable as "Excellent," "Above Average," "Average," or "Below Average."[34] Although the scale incorporated four categories, the intern supervisors rarely employed the "Below Average" category.[35] Consequently, the mean ratings are higher and the standard deviations are smaller than would ordinarily be expected.[36]

Comparison of ratings

Table 5.2 indicates the mean rating of each group on each variable and the probability of the difference between the two means for each variable.

---

[34] The values assigned to each rating for the purpose of statistical analysis were: 4 ("Excellent"), 3 ("Above Average"), 2 ("Average"), and 1 ("Below Average").

[35] The "Below Average" category was used in only six of 253 ratings (11 variables x 23 intern teachers). The remarks in footnote 17 in Chapter 3 are equally applicable to intern teaching.

[36] Assuming a symmetrical distribution across a four category scale.

Table 5.2

Mean Rating of Two Groups of Secondary Intern Teachers on Eleven Variables

Variable	F15B	R15B	p
SIT 1	3.3	3.3	
SIT 2	3.0	3.0	
SIT 3	3.3	3.3	
SIT 4	2.6	2.9	.40<.30
SIT 5	2.8	2.9	.80<.70
SIT 6	2.9	3.2	.40<.30
SIT 7	2.8	2.9	.80<.70
SIT 8	3.1	3.1	
SIT 9	2.6	3.1	.20<.10
SIT 10	3.6	3.6	
SIT 11	3.4	3.0	.30<.20

The mean ratings of the regular intern teachers equal or exceed those of the Ford intern teachers on every variable except one.[37] However, the differences between the means are non-significant[38] in every instance.

Since there were no significant differences between the mean student teaching ratings of the Ford and regular graduates,[39] it is not unexpected that there are no significant differences between their mean intern teaching ratings.

---

[37] SIT 11.

[38] That is, $p > .05$.

[39] See "Student Teaching--Secondary" in Chapter 3.

Teaching skills

It will be recalled that the average number of semester hours of undergraduate education courses[40] completed by the regular secondary students exceeded the number completed by the Ford secondary students by only 3.8 semester hours.[41] Although the average number of semester hours of education courses completed during the period subsequent to award of the baccalaureate and prior to intern teaching was not determined, it seems unlikely that the gap between the Ford and regular graduates could have widened very much.[42] It will be recalled, too, that the difference between the Ford and regular student teachers on the various teaching skills and techniques variables was minimal.[43]

In view of the foregoing the rather substantial (but non-significant) difference between the mean ratings of the Ford and regular intern teachers on the teaching skills variable (SIT 9) is somewhat unexpected.

---

[40] See footnote 29 in Chapter 2.

[41] See Table 2.23.

[42] The Ford secondary graduates who were awarded the Five-Year Diploma comleted an average of 7.4 semester hours of education courses during the period subsequent to award of the baccalureate and prior to completion of the fifth year program. The regular secondary graduates who were awarded the Five-Year Diploma completed an average of 13.2 semester hours of education courses during the same period. However, the proportion of these courses completed prior to (and subsequent to) intern teaching was not determined. It should be noted that the average number of semester hours of education courses completed cited above were computed only for the 52 Ford (44 elementary and eight secondary) and 48 regular (38 elementary and 10 secondary) graduates who were awarded the Five-Year Diploma (on or before August 31, 1966). Although all individuals who were awarded the Five-Year Diploma successfully completed intern teaching, the converse is not true.

[43] See "Teaching skills and techniques" in Chapter 3.

Self-evaluation

The self-evaluation variable (SIT 11) was the only variable on which the mean rating of the Ford intern teachers exceeded that of the regular intern teachers. Again the difference was relatively substantial[44] but non-significant.

The self-evaluation variable (SIT 11) includes the ability " . . . to evaluate self realistically and take appropriate action" and the " . . . desire for self-improvement." It was in the same area that the cooperating teachers rated the Ford secondary student teachers somewhat higher (but not significantly higher) than the regular secondary student teachers.[45]

Again, then, these data suggest although by no means conclusively, that there may be some basis to informal reports that the Ford graduates seemed to be rather adept in acquiring insight into their deficiencies and energetic in striving to overcome them.[46] There is some hint in these data, too, again certainly not conclusive, that the relatively intense desire to achieve which the Ford students seemed to demonstrate as undergraduates[47] persisted into the fifth year.

[44] The difference between the mean ratings on SIT 11 was greater than that on any other variable except SIT 9. See Table 5.2.

[45] See "Evaluation of teacher progress" in Chapter 3.

[46] See the next to the last paragraph in "Comparison of ratings" in the preceding section ("Intern Teaching--Elementary").

[47] See the last two paragraphs of "Evaluation of teacher progress" in Chapter 3.

Control and discipline

There is no variable on which the mean rating of the Ford intern teachers is lower than the control and discipline variable (SIT 4).[48] The same thing is true of the regular intern teachers.[49] This seems to suggest that the difficulties in coping with "control and discipline" in the classroom which both the Ford and the regular student teachers experienced[50] tended to persist through intern teaching.

Knowledge of subject taught

The knowledge of subject taught variable (SIT 8) is the only variable in the instruments used to assess student and intern teaching[51] which focused directly on the extent to which the individual being rated demonstrated mastery and understanding of the discipline(s) which he was attempting to teach.[52] The mean rating of the regular secondary intern teachers on this variable was identical to that of their Ford counterparts.[53]

---

[48] The mean rating of the Ford intern teachers on SIT 9 is as low as their mean rating on SIT 4 but not lower.

[49] The mean rating of the regular intern teachers on SIT 5 and SIT 7 is as low as their mean rating on SIT 4 but not lower.

[50] See "Classroom management" in Chapter 3.

[51] That is, the "Teacher Evalution Record" used in the assessment of elementary student teachers and elementary intern teachers and the "Evaluation of Teaching Competencies of Student Teachers" used in the assessment of secondary student teachers. See "Instrument" in Chapter 3.

[52] Several variables in the other two instruments (EST/EIT 5 and SST 4-3) touch on this obliquely.

[53] There was, it will be recalled, little or no difference between the Ford and regular student teachers on variables EST 5 and SST 4-3. The same was true for the Ford and regular intern teachers on variable EIT 5. See footnote 49 and Tables 3.2, 3.4, and 5.1.

The knowledge of subject taught variable (SIT 8) and the teaching skills variable (SIT 9) seem to have at least a tangential bearing on a statement in the report of the Liberal Arts Committee which indicated that it was their belief " . . . that a teacher trained in the experimental [Ford] program with its emphasis upon language will be better able to present the essentials of his subject matter most effectively to his pupils."

This statement suggests the hypothesis that given equal mastery and understanding of the discipline(s) taught, the Ford intern teachers should have been (significantly) " . . . better able to present the essentials of [their] . . . subject matter" than the regular intern teachers. If it is assumed that the mean ratings on knowledge of subject taught (SIT 8) indicate mastery and understanding of the discipline(s) taught, it can be said that the Ford and regular intern teachers did not differ in this respect. If it is assumed that the mean ratings on teaching skills (SIT 9) indicate the ability " . . . to present the essentials of . . . subject matter," the suggested hypothesis is not confirmed--indeed, the regular intern teachers appear to have the edge over their Ford counterparts (although the difference is not significant). The foregoing dialectic is speculative, of course, if for no other reason than the fact that the assumptions are debatable.

Intern Teaching in Perspective

In contrast to the student teaching practicum which represented one of the salient differences between the Ford and regular programs, the intern teaching experience was the same for the graduates of both programs.

The intern teacher was appointed to a full-time position in a public school for one semester. The duties and responsibilities of the intern teacher were essentially comparable to those of any other teacher and he was compensated accordingly. The intern teacher was under the supervision of an experienced teacher (intern supervisor).

The differences between the mean ratings of the Ford and regular elementary intern teachers were small and non-significant. The marked differences which existed at the completion of student teaching were not evident at the end of a semester of intern teaching. It was impossible to account for the apparent improvement in the performance of the Ford intern teachers on the basis of available data but it was noted that there had been informal reports (which could be neither corroborated nor refuted) that the Ford graduates seemed to be highly motivated to achieve and quick to discern and overcome their weaknesses.

The absence of significant differences between the intern teaching ratings of the Ford and regular secondary graduates was not unexpected since there had been no significant differences between their mean student teaching ratings.

The fact that the mean rating of the regular intern teachers on the teaching skills variables (SIT 9) was substantially (but not significantly) higher than that of the Ford intern teachers was somewhat unexpected since the differences between the two groups on comparable student teaching variables had been minimal.

The self evaluation variable (SIT 11) was the single variable on which the mean rating of the Ford secondary intern teachers exceeded that of their regular counterparts. The difference was relatively substantial but non-significant. It was in the same general area that the Ford student teachers had been rated higher (not not significantly higher) than the regular student teachers. In the absence of conclusive evidence it could only be speculated that informal reports concerning the adeptness of the Ford graduates in perceiving and overcoming their deficiencies and their extraordinary desire to achieve may have some basis.

It was observed that the difficulty which the Ford and regular secondary student teachers apparently had in the area of control and discipline seemed to persist through intern teaching.

Finally, it was suggested that if it is assumed that the mean ratings on knowledge of subject taught (SIT 8) indicate mastery and understanding of the discipline(s) taught, and if it is assumed that the mean ratings on teaching skills (SIT 9) indicate the ability " . . . to present the essentials of . . . subject matter," the belief that the " . . . teacher trained in the experimental[Ford] program . . . [would] be better able to present the essentials of his subject matter . . ." does not seem to be confirmed.

CHAPTER 6

CLASSROOM OBSERVATIONS

Introduction

Observation program

At the time that this study was being prosecuted,[1] it was possible to obtain data pertaining to the student teaching performance of all of the Ford and regular students[2] as well as data pertaining to the intern teaching performance of 115 of the Ford and regular graduates.[3] There were, however, no data available concerning the on-the-job performance of the "successful" graduates[4] of the Ford and regular programs who had assumed positions in the public school system.[5] It seemed imperative, therefore, that a classroom observation program be developed to gather data on the performance of these teachers.[6]

Source of data

It was indicated in an earlier chapter[7] that 89 "successful" graduates of the two programs[8] were known to have assumed positions in the Hawaii public school system during the first semester of the 1966-67 academic year.[9] An invitation was extended to 82[10] of these teachers to participate in the classroom observation program and all but one[11] agreed to be observed. Therefore, the data presented in this chapter are based on the observation of 81 teachers[12] in 50 schools.[13]

---

[1] 1966-67 academic year.

[2] See Chapter 3.

[3] See Chapter 5.

[4] See footnote 2 in Chapter 2.

[5] See footnote 5 in Chapter 3.

[6] In the preceding chapters the subjects of this study were referred to as "students" to indicate undergraduate status or as "graduates" to indicate graduate (fifth year) status. In this chapter they will be referred to as "teachers" to indicate their status as regular employees of the Hawaii State Department of Education.

[7] See Chapter 1.

[8] 45 Ford graduates (39 elementary and 6 secondary) and 44 regular graduates (36 elementary and 8 secondary).

The Observation Instrument

Selection of the instrument

The observation instrument selected for use in the classroom observation program in this study was the Classroom Observation Record (COR) which was developed by Ryans and his associates in the course of the Teacher Characteristics Study.[14] Although the perfect classroom observation instrument is yet to be devised (and, indeed, the infallible observer is yet to be identified), the Classroom Observation Record was selected for several reasons.

First, the Classroom Observation Record is a research-based instrument in that it was evolved from extensive research and analysis of teacher behavior.

---

[9] The classroom observation program described in this chapter was executed during the second semester of the 1966-67 academic year.

[10] There were seven teachers to whom invitations were not extended: three were located in schools on outlying islands, two were on leave, and two were not in teaching positions.

[11] A Ford elementary teacher.

[12] All data reported in this chapter, then, are based on the following Ns:

F11A=35 R11A=33
F11B= 6 R11B= 7
F11 =41 R11 =40

[13] 38 elementary schools, one elementary-intermediate school, five intermediate schools, one intermediate-high school, and five high schools.

[14] The Teacher Characteristics Study (TCS) is probably the most exhaustive study of the social and personal characteristics of teachers published to date. It represents almost a decade of effort on the part of Dr. David G. Ryans, who directed the study, and his associates. The Teacher Characteristics Study is reported in detail in David G. Ryans, *Characteristics of Teachers*, Washington, American Council on Education, 1960.

Several pages hence, the procedure used in developing the instrument will be reviewed briefly.

Second, the instrument yields quantitative behavior descriptions. As Ryans points out, " . . . quantitative estimates are more useful to the researcher, since they permit comparisons to be made with known probability distributions."[15]

Third, the COR seemed to be especially suited to this enterprise since it is intended to provide descriptive rather than evaluative data.[16] This permitted the classroom observation program to proceed without becoming entangled in the morass of endeavoring to define and assess "good" and "bad" teacher (or pupil) behavior. It will be seen that the COR data enables the researcher to locate a teacher on a point along a behavior pattern continuum which is essentially descriptive. Ryans emphasizes that the " . . . position of a teacher near one of the poles of a teacher behavior pattern is intended to provide a factual description of certain aspects of that teacher's behavior and does not necessarily identify a teacher as 'effective' or 'ineffective.' Describing a teacher as friendly and understanding [, for example,] does not per se mean that the teacher is a competent teacher--that friendliness and understanding denote effectiveness."[17]

Fourth, the Classroom Observation Record seemed appropriate for this study because it provides for an analytical[18] approach to describing teacher behavior rather than an evaluation of broad areas of behavior. Although, as Ryans observes, there " . . . is little evidence of the superiority of a particular type of instrument, . . . advantages can be gained by making an analytical approach to assessment, instead of trying to evaluate very broad areas of behavior."[19]

---

[15] Ryans, op. cit., p. 73.

[16] There are some individuals who maintain that the COR is not without an evaluative tone. They hold that the presumably descriptive terms included in the instrument (and the glossary) have, in many instances, evaluative connotations. In any event, the COR probably represents one of the more successful efforts to provide data which is maximally descriptive and minimally evaluative.

[17] Ryans, op. cit., p. 126.

[18] There are instruments designed to describe teacher behavior which are considerably more analytical than the COR. However, for the purpose of this study it seemed important that the instrument be relatively analytical yet encompass a rather broad spectrum of teacher (and pupil) behavior.

In short, then, the Classroom Observation Record seemed to be the most appropriate instrument for the classroom observation program in this study. It is based on a substantial amount of research, it yields (essentially) descriptive data, it provides quantitative behavior descriptions, and, finally, it fosters a (relatively) analytical view of teacher behavior.

Development of the instrument

Since the development of the Classroom Observation Record is detailed in Characteristics of Teachers[20] this discussion is intended only to provide the reader with a brief overview of its evolution.

The general procedure used by Ryans and his associates in perfecting the COR is summarized in the following paragraph:

> . . . Intensive study was made of the literature covering the function of the teacher as seen from various educational viewpoints, and of previous research undertaken in the areas of human personality and particularly teacher personnel. Reports of critical incidents of teacher behavior were accumulated and analyzed. Assessments of teacher behavior on a number of first-order dimensions (hypothesized in the light of teacher traits suggested by the literature and by reported critical incidents) were obtained and factor-analyzed. . . . finally, . . . patterns of teacher classroom behavior . . . were described.[21]

The three major teacher behavior patterns identified by Ryans and his associates were:

TCS Pattern X_o--warm, understanding, friendly, vs. aloof, egocentric, restricted teacher behavior.

---

[19] Ryans, op. cit., p. 74.

[20] Ibid., p. 71-136.

[21] Ibid., p. 71

TCS Pattern Y_o--responsible, businesslike, systematic vs. evading, unplanned, slipshod teacher behavior.

TCS Pattern Z_o--stimulating, imaginative, surgent vs. dull, routine teacher behavior.[22]

Ryans observes that these teacher behavior patterns " . . . are not unique to the Teacher Characteristics Study--that they are supported not only by rational analysis of the teaching process but also by reports of other factor analyses and investigations concerned with the exploration of personal behavior, particularly teacher behavior."[23]

The teacher behavior patterns are not viewed as inclusive. Indeed, Ryans asserts unequivocally that " . . . all teacher behavior does not fall into one of these three patterns."[24] He adds, however, that " . . . practical experience as well as the empirical data indicate that these are three of the principal areas involved in interpersonal relations, and that they might well be given basic consideration in the theory of teacher behavior and also in teacher personnel procedures."[25]

The final form of the Classroom Observation Record as devised by Ryans and his associates incorporated 18 first-order teacher behavior dimensions and four first-order pupil behavior dimensions. There was also developed a complete glossary to provide examples of the specific behaviors contributing to the polar descriptions of each dimension. The first-order dimensions and behavior exemplifying each are:[26]

---

[23] Ibid., p. 109.

[24] Ibid., p. 103.

[25] Loc. cit.

[26] Ibid., p. 86-92.

Pupil Behavior Dimensions

1. Apathetic-Alert Pupil Behavior

Apathetic

1. Listless.
2. Bored-acting.
3. Entered into activities half-heartedly.
4. Restless.
5. Attention wandered.
6. Slow in getting under way.

Alert

1. Appeared anxious to recite and participate.
2. Watched teacher attentively.
3. Worked concentratedly.
4. Seemed to respond eagerly.
5. Prompt and ready to take part in activities when they begin.

2. Obstructive-Responsible Pupil Behavior

Obstructive

1. Rude to one another and/or to teacher.
2. Interrupting; demanding attention; disturbing.
3. Obstinate; sullen.
4. Refusal to participate.
5. Quarrelsome; irritable.
6. Engaged in name-calling and/or tattling.
7. Unprepared.

Responsible

1. Courteous, cooperative, friendly with each other and with teacher.
2. Completed assignments without complaining or unhappiness.
3. Controlled voices.
4. Received help and criticism attentively.
5. Asked for help when needed.
6. Orderly without specific directions from teacher.
7. Prepared.

3. Uncertain-Confident Pupil Behavior

Uncertain

1. Seemed afraid to try; unsure.
2. Hesitant; restrained.
3. Appeared embarrassed.
4. Frequent display of nervous habits, nail-biting, etc.
5. Appeared shy and timid.
6. Hesitant and/or stammering speech.

Confident

1. Seemed anxious to try new problems or activities.
2. Undisturbed by mistakes.
3. Volunteered to recite.
4. Entered freely into activities.
5. Appeared relaxed.
6. Spoke with assurance.

4. Dependent-Initiating Pupil Behavior

Dependent

1. Relied on teacher for explicit directions.
2. Showed little ability to work things out for selves.
3. Unable to proceed when initiative called for.
4. Appeared reluctant to take lead or to accept responsibility.

Initiating

1. Volunteered ideas and suggestions.
2. Showed resourcefulness.
3. Took lead willingly.
4. Assumed responsibilities without evasion.

Teacher Behavior Dimensions

5. Partial-Fair Teacher Behavior

Partial

1. Repeatedly slighted a pupil.
2. Corrected or criticized certain pupils repeatedly.
3. Repeatedly gave a pupil special advantages.
4. Gave most attention to one or a few pupils.
5. Showed prejudice (favorable or unfavorable) toward some social, racial, or religious groups.
6. Expressed suspicion of motives of a pupil.

Fair

1. Treated all pupils approximately equally.
2. In case of controversy pupil allowed to explain his side.
3. Distributed attention to many pupils.
4. Rotated leadership impartially.
5. Based criticism or praise on factual evidence, not hearsay.

6. Autocratic-Democratic Teacher Behavior

Autocratic

1. Told pupils each step to take.
2. Intolerant of pupils' ideas.
3. Mandatory in giving directions; orders to be obeyed at once.
4. Interrupted pupils although their discussion was relevant.
5. Always directed rather than participated.

Democratic

1. Guided pupils without being mandatory.
2. Exchanged ideas with pupils.
3. Encouraged (asked for) pupil opinion.
4. Encouraged pupils to make own decisions.
5. Entered into activities without domination.

7. Aloof-Responsive Teacher Behavior

Aloof

1. Stiff and formal in relations with pupils.
2. Apart; removed from class activity.
3. Condescending to pupils.
4. Routine and subject matter only concern; pupils as persons ignored.
5. Referred to pupil as "this child" or "that child."

Responsive

1. Approachable to all pupils.
2. Participated in class activity.
3. Responded to reasonable requests and/or questions.
4. Spoke to pupils as equals.
5. Commended effort.
6. Gave encouragement.
7. Recognized individual differences.

8. Restricted-Understanding Teacher Behavior

Restricted

1. Recognized only academic accomplishments of pupils; no concern for personal problems.
2. Completely unsympathetic with a pupil's failure at a task.
3. Called attention only to a very good or very poor work.
4. Was impatient with a pupil.

Understanding

1. Showed awareness of a pupil's personal emotional problems and needs.
2. Was tolerant of error on part of pupil.
3. Patient with a pupil beyond ordinary limits of patience.
4. Showed what appeared to be sincere sympathy with a pupil's viewpoint.

9. Harsh-Kindly Teacher Behavior

Harsh

1. Hypercritical; fault finding.
2. Cross; curt.
3. Depreciated pupil's efforts; was sarcastic.
4. Scolded a great deal.
5. Lost temper.
6. Used threats.
7. Permitted pupils to laugh at mistakes of others.

Kindly

1. Went out of way to be pleasant and/or to help pupils; friendly.
2. Gave a pupil a deserved compliment.
3. Found good things in pupils to call attention to.
4. Seemed to show sincere concern for a pupil's personal problem.
5. Showed affection without being demonstrative.
6. Disengaged self from a pupil without bluntness.

10. Dull-Stimulating Teacher Behavior

Dull

1. Uninteresting, monotonous explanations.
2. Assignments provided little or no motivation.
3. Failed to provide challenge.
4. Lacked animation.
5. Failed to capitalize on pupil interests.
6. Pedantic, boring.
7. Lacked enthusiasm; bored-acting.

Stimulating

1. Highly interesting presentation; got and held attention without being flashy.
2. Clever and witty, though not smart-alecky or wisecracking.
3. Enthusiastic; animated.
4. Assignments challenging.
5. Took advantage of pupil interests.
6. Brought lesson successfully to a climax.
7. Seemed to provoke thinking.

11. Stereotyped-Original Teacher Behavior

Stereotyped

1. Used routine procedures without variation.
2. Would not depart from procedure to take advantage of a relevant question or situation.

Original

1. Used what seemed to be original and relatively unique devices to aid instruction.
2. Tried new materials or methods.

3. Presentation seemed unimaginative.
4. Not resourceful in answering questions or providing explanations.

3. Seemed imaginative and able to develop presentation around a question or situation.
4. Resourceful in answering questions; had many pertinent illustrations available.

12. Apathetic-Alert Teacher Behavior

Apathetic

1. Seemed listless; languid; lacked enthusiasm.
2. Seemed bored by pupils.
3. Passive in response to pupils.
4. Seemed preoccupied.
5. Attention seemed to wander.
6. Sat in chair most of time; took no active part in class activities.

Alert

1. Appeared buoyant; wide-awake; enthusiastic about activity of the moment.
2. Kept constructively busy.
3. Gave attention to, and seemed interested in, what was going on in class.
4. Prompt to "pick up" class when pupils' attention showed signs of lagging.

13. Unimpressive-Attractive Teacher Behavior

Unimpressive

1. Untidy or sloppily dressed.
2. Inappropriately dressed.
3. Drab, colorless.
4. Posture and bearing unattractive.
5. Possessed distracting personal habits.
6. Mumbled; inaudible speech; limited expression; disagreeable voice tone; poor inflection.

Attractive

1. Clean and neat.
2. Well-groomed; dress showed good taste.
3. Posture and bearing attractive.
4. Free from distracting personal habits.
5. Plainly audible speech; good expression; agreeable voice tone; good inflection.

14. Evading-Responsible Teacher Behavior

Evading

1. Avoided responsibility; disinclined to make decisions.
2. "Passed the buck" to class, to other teachers, etc.
3. Left learning to pupil, failing to give adequate help.
4. Let a difficult situation get out of control.
5. Assignments and directions
6. No insistence on either individual or group standards.
7. Inattentive with pupils.
8. Cursory.

Responsible

1. Assumed responsibility; made decisions as required.
2. Conscientious.
3. Punctual.
4. Painstaking; careful.
5. Suggested aids to learning.
6. Controlled a difficult situation.
7. Gave definite directions.
8. Called attention to standards of quality.
9. Attentive to class.
10. Thorough.

15. Erratic-Steady Teacher Behavior

Erratic	Steady
1. Impulsive; uncontrolled; temperamental; unsteady.	1. Calm; controlled.
2. Course of action easily swayed by circumstances of the moment.	2. Maintained progress toward objective.
3. Inconsistent.	3. Stable, consistent, predictable.

16. Excitable-Poised Teacher Behavior

Excitable	Poised
1. Easily distrubed and upset; flustered by classroom situation.	1. Seemed at ease at all times.
2. Hurried in class activities; spoke rapidly using many words and gestures.	2. Unruffled by situation that developed in classroom; dignified without being stiff or formal.
3. Was "jumpy"; nervous.	3. Unhurried in class activities; spoke quietly and slowly.
	4. Successfully diverted attention from a stress situation in classroom.

17. Uncertain-Confident Teacher Behavior

Uncertain	Confident
1. Seemed unsure of self; faltering, hesitant.	1. Seemed sure of self; self-confident in relations with pupils.
2. Appeared timid and shy.	2. Undisturbed and unembarrassed by mistakes and/or criticism.
3. Appeared artificial.	
4. Disturbed and embarrassed by mistakes and/or criticism.	

18. Disorganized-Systematic Teacher Behavior

Disorganized	Systematic
1. No plan for classwork.	1. Evidence of a planned though flexible procedure.
2. Unprepared.	2. Well prepared.
3. Objectives not apparent; undecided as to next step.	3. Careful in planning with pupils.
4. Wasted time.	4. Systematic about procedure of class.
5. Explanations not to the point.	5. Had anticipated needs.
6. Easily distracted from matter at hand.	6. Provided reasonable explanations.
	7. Held discussion together; objectives apparent.

19. Inflexible-Adaptable Teacher Behavior

Inflexible

1. Rigid in conforming to routine.
2. Made no attempt to adapt materials to individual pupils.
3. Appeared incapable of modifying explanation or activities to meet particular classroom situations.
4. Impatient with interruptions and digressions.

Adaptable

1. Flexible in adapting explanations.
2. Individualized materials for pupils as required; adapted activities to pupils.
3. Took advantage of pupils' questions to further clarify ideas.
4. Met an unusual classroom situation competently.

20. Pessimistic-Optimistic Teacher Behavior

Pessimistic

1. Depressed; unhappy.
2. Skeptical.
3. Called attention to potential "bad."
4. Expressed hopelessness of "education today," the school system, or fellow educators.
5. Noted mistakes; ignored good points.
6. Frowned a great deal; had unpleasant facial expression.

Optimistic

1. Cheerful; good-natured.
2. Genial.
3. Joked with pupils on occasion.
4. Emphasized potential "good."
5. Looked on bright side; spoke optimistically of the future.
6. Called attention to good points; emphasized the positive.

21. Immature-Integrated Teacher Behavior

Immature

1. Appeared naive in approach to classroom situations.
2. Self-pitying; complaining; demanding.
3. Boastful; conceited.

Integrated

1. Maintained class as center of activity; kept self out of spotlight; referred to class's activities, not own.
2. Emotionally well controlled.

22. Narrow-Broad Teacher Behavior

Narrow

1. Presentation strongly suggested limited background in subject or material; lack of scholarship.
2. Did not depart from text.
3. Failed to enrich discussions with illustrations from related areas.
4. Showed little evidence of breadth of cultural background in such areas as science, arts, literature, and history.
5. Answers to pupils' questions incomplete or inaccurate.
6. Noncritical approach to subject.

Broad

1. Presentation suggested good background in subject; good scholarship suggested.
2. Drew examples and explanations from various sources and related fields.
3. Showed evidence of broad cultural background in science, art, literature, history, etc.
4. Gave satisfying, complete, and accurate answers to questions.
5. Was constructively critical in approach to subject matter.

In using the Classroom Observation Record, the observer, immediately following an observation, estimates (for each dimension) the extent, on a seven-point scale,[27] to which one or the other pole of the dimension was approximated by the behavior of the teacher.

The first-order dimensions which comprise[28] teacher behavior patterns X, Y, and Z for elementary teachers are:[29]

Teacher Behavior Pattern X: Autocratic-Democratic
Aloof-Responsive
Restricted-Understanding
Harsh-Kindly
Pessimistic-Optimistic

Teacher Behavior Pattern Y: Obstructive-Responsible[30]
Evading-Responsible
Erratic-Steady
Excitable-Poised
Disorganized-Systematic

Teacher Behavior Pattern Z: Dull-Stimulating
Stereotyped-Original

The first-order dimensions which comprise teacher behavior patterns X, Y, and Z for secondary teachers are:

Teacher Behavior Pattern X: Autocratic-Democratic
Aloof-Responsive
Restricted-Understanding
Harsh-Kindly
Pessimistic-Optimistic

---

[27] The digit (1, 2, 3, 4, 5, 6, or 7) which represents the observer's estimate of the extent to which one or the other pole of a dimension is approximated by the observed behavior is referred to as an "assessment" or a "score." In this context an assessment (or score) is intended to be a description of observed behavior (in terms of prescribed dimensions) rather than an evaluation (in the conventional good-bad sense) of the behavior.

[28] The raw scores (assessments) on the first-order dimensions are summed to yield the teacher behavior pattern raw score. See "Procedures for processing observation data."

[29] David G. Ryans, "The Classroom Observation Record," n.p., mimeographed, n.d., p. 22.

[30] This dimension refers to pupil behavior in the teacher's class.

Teacher Behavior Pattern Y: Evading-Responsible
Disorganized-Systematic

Teacher Behavior Pattern Z: Dull-Stimulating
Stereotyped-Original

The Classroom Observation Program

Observer training

Ryans stresses the importance of observer training by urging that " . . . [m]uch of the ambiguity of the data based upon direct observation and assessment appears to arise from the lack of common understanding and procedure on the part of different observers. . . . Therefore, in addition to the needs for careful selection of observers and operational definitions of the criterion components, the requirement that observers be carefully trained is inescapable for competent observation and assessment of behavior."[31]

The procedure used to train the two observers[32] engaged in the classroom observation program in this study was essentially identical to that used in the Teacher Characteristics Study.[33] First, the observers studied and discussed the operational definitions of the behaviors represented by the various first-order dimensions. Next, observations were made of the same teacher simultaneously (but independently) with subsequent comparison and discussion of the observation process and discrepancies in the observation data. As the observers refined their observation procedures, observations of the same teacher were made at different times, again followed by comparison of data and discussion. Finally, when the observers had attained what seemed to be a reasonable degree of congruence in observation techniques and procedures, the classroom observation program was initiated.

---

[31] Ryans, op. cit., p. 72.

[32] Dr. Bonnie L. Ballif, Assistant Professor of Education, Education Research and Development Center, and the author.

[33] Ryans, op. cit., p. 72-73 and 92-94.

In addition to having had teaching experience at both the elementary and secondary levels, the observers are believed to have possessed the other attributes deemed desirable by Ryans and his associates: " . . . (1) above average with respect to the ability to attend and to perceive, (2) not only familiar with teacher behavior, but also interested in its analysis and assessment, (3) able and willing to set aside personal biases and to employ an objective approach to the dimensions of teacher behavior selected for study,[34] (4) capable of making a good impression upon the teachers [observed] . . . and able to put them at ease . . . , (5) above average in general ability, and (6) emotionally well adjusted."[35]

Number and duration of observations

In planning the classroom observation program, the question of number of independent observations necessary to attain optimum reliability emerged. Again, it was possible to take advantage of the experience of the Teacher Characteristics Study.

Ryans and his associates experimented with varying numbers of independent observations.[36] It was concluded that " . . .[i]n general, the literature and the experience of the [Teacher Characteristics] Study indicated that the accuracy of assessments of behavior increases as the number of independent assessments is increased, but with successively diminishing returns, and, furthermore, a very high reliability appears to be unattainable even with a very large number of assessments."[37]

---

[34] There were several measures taken to minimize observer error attributable to possible (conscious or unconscious) observer bias. See "Measures to minimize observer error."

[35] Ryans, op. cit., p. 92-93.

[36] "As many as eight independent observations . . . were made on one small group of teachers . . . " Ryans, op. cit., p. 94.

The standard observation procedure finally adopted for the Teacher Characteristics Study, therefore, entailed " . . . two one-class period . . . observations of each teacher, the observations to be made at different times by different observers. The two independent assessments of a teacher's classroom behavior became the complete record for a teacher provided the two assessments did not show substantial discrepancy. If the assessments showed considerable divergence on any teacher behavior pattern, . . . a third observation and assessment was made by a different observer."[38]

The same procedure was employed for the classroom observation program in this study. Although there was considerable variability among the observation data, there were no instances in which divergence on a particular teacher behavior pattern seemed to be so great as to require a third observation.

A related question was that of the optimum length of an observation. In the Teacher Characteristics Study, "[o]bservations were scheduled to permit an observer to be present in a teacher's classroom throughout one class period. This length of observation was adopted in light of . . . [their] experience during preliminary studies of the optimum observation period and because of administrative convenience--lack of interference with the school program. In a limited number of cases, thirty-minute observations were conducted; most observations consumed approximately forty-five minutes."[39]

---

[37] *Loc*. *cit*.

[38] *Ibid*., p. 94-95.

In the classroom observation program in this study, there was no instance when an observation was of less than 30 minutes duration. In most cases observations lasted a minimum of 45 minutes and there were a number of instances when observations lasted up to an hour.

Measures to minimize observer error

In the planning and execution of the classroom observation program several measures were taken in an effort to minimize observer error attributable to possible observer bias and/or non-representative behavior on the part of the teacher (and pupils).

Even though both observers professed no predilections concerning the two (Ford and regular) teacher education programs, the possible impact of any conscious or unconscious biases was minimized by keeping the observers uninformed as to which teachers were formerly in the Ford program and which teachers were formerly in the regular program (they were also uninformed as to what proportion of the 81 teachers were formerly in each program). Thus, neither of the observers knew at the time that an observation was conducted whether the teacher being observed had been in the Ford program or the regular program as an undergraduate.[40]

As indicated previously the COR incorporated 18 first-order teacher behavior dimensions and four first-order pupil behavior dimensions. It was indicated, too, that certain combinations of these first-order dimensions comprise the three elementary and three secondary teacher behavior patterns. It seemed important to insure that each observer would assess each teacher (and pupil) behavior dimension independently and with equal care without regard to the teacher behavior patterns. Although the observers were aware that the first-order dimensions were combined in some fashion to form the teacher behavior patterns they were not informed as to which first-order dimensions comprised each teacher behavior pattern. The intent, obviously, was to encourage the observers to consider each of the 22 first-order behavior dimensions independently and with equal diligence.

---

[39] Ibid., p. 94.

[40] It should be noted, too, that the possibility of observer error attributable to personal acquaintance with the teachers was extremely remote. In virutally every instance the observers were not acquainted with the teachers and, indeed, the observers had never seen most of the teachers prior to the observation visits.

If the observations were to be of behavior representative of the everyday behavior of the teachers (and pupils) being observed, it seemed essential that any potential threat to the teachers be minimized. The letter which enlisted their cooperation in the classroom observation program, therefore, emphasized that the observations would " . . . not yield data as to whether you are a 'good' or a 'bad' teacher." and, further, that the observation data would be " . . . anonymous and strictly confidential" and that it would " . . . not be reported on an individual basis but, rather, on a group basis." Although it seems quite likely that at least some of the teachers had reservations about participating in the program, the fact that all but one agreed to be observed suggests that they probably did not feel unduly threatened.[41]

---

[41] This is not to say that all the teachers who participated did so solely because they did not feel unduly threatened. It appears that some participated because they wanted to contribute to this particular research effort. Others seemed to be motivated by a sense of professional responsibility to contribute to any research enterprise. Still others probably participated because the classroom observation program was sanctioned by the district superintendents and principals.

An additional measure to insure that the observed classroom behavior would be as representative as possible was to conduct the observations without advanced notice. Although the teachers to be observed knew that the observers would be visiting their classrooms (they had agreed to be observed), they did not know when. The teachers were informed that the observations would be " . . . conducted within the next few months"[42] but that the exact date and time of the visits would be unannounced. Each teacher was exhorted to " . . . conduct your class exactly in the same fashion you would otherwise . . . when an observer comes to your classroom."[43]

The fact that the visits were unannounced and extended over a period of several months made it all but impossible for a teacher to "prepare" for an observation. Moreover, in most instances the observer entered the classroom when a class was either in session or about to go in session, making it difficult for a teacher to initiate a "special" activity calculated to "make an impression" on the observer.[44]

The unannounced observation procedure did pose some problems, however, because it was impossible for the observer to find out if a teacher was absent, on a field trip, or otherwise unavailable for observation without actually going to her classroom. This made for some loss of time and effort, particularly in those instances in which there was only one teacher in the school and the school was geographically remote from other schools in which teachers to be observed were located.

---

[42] Donald G. Aten, Letter to teachers participating in the classroom observation program, February 3, 1967.

[43] Donald G. Aten, Letter to teachers participating in the classroom observation program, n.d.

[44] In the few instances when it seemed apparent that a "special" activity had been initiated for the benefit of the observer, the observer made another observation (again unannounced) at a later date.

Procedures for processing observation data

After a classroom observation had been made, the raw data consisted of an assessment (score) ranging from 1 to 7 on each of the 22 first-order teacher (and pupil) behavior dimensions. Thus, for each teacher observed there were two independent assessments for each of 22 variables.

Again, it was possible to take advantage of the work of Ryans in determining the procedures for processing the observation data.

> The combination of assessments into a composite theoretically poses a problem. Appropriate means of combining ratings, taking into account the reliability and validity of the judges, have been suggested . . . However, there is no conclusive evidence to show that taking into account whether an observer is a hard or easy rater, or a reliable or unreliable rater, adds appreciably to the usefulness of the composite assessment. This appeared to be borne out by the experience of [the Teacher Characteristics] . . . Study, and the position is supported by other reports in the literature. . . . Perhaps it is not amiss to convert the raw assessment data of different observers into comparable standard deviation units before combination, but additional attention to the differential weighting of observers' assessments seems to provide little gain.[45]

Following the lead of the Teacher Characteristics Study, then, the raw scores (assessments) on the appropriate first-order dimensions[46] were summed for each observer independently to yield three teacher behavior pattern raw scores. Each teacher behavior pattern raw score was then converted to a standard score (with a mean of 50 and a standard deviation of 10). Thus for each observer and for each teacher there were three teacher behavior pattern scores in standard form.

---

[45] Ryans, *op. cit.*, p. 75.

[46] The first-order dimensions which comprise each teacher behavior pattern were indicated in a preceding section ("*Development of the instrument*").

Again, the lead of Ryans and his associates was followed in forming a composite assessment (score) for each teacher behavior pattern for each teacher, that is " . . . [i]n the absence of acceptable evidence of the desirability of differentially weighting the pattern scores of different observers, each observer's assessment of a teacher behavior pattern (in standard score form) was given an equal weight of unity in forming a composite assessment."[47] Thus each teacher's composite score (assessment) on each teacher behavior pattern was obtained by combining and averaging the two standard scores (one for each observer).

In summary, then, the procedure for arriving at the values representing the three teacher behavior pattern assessments for a teacher was as follows. First, the raw scores of each observer on the first-order dimensions which comprise each teacher behavior pattern were summed to create a raw score for each teacher behavior pattern. These raw scores were in turn converted into standard score form--separately for each observer. The two standard scores were then combined and averaged to provide one composite assessment for each teacher on each teacher behavior pattern.

Reliability of the Assessments

Factors which limit reliability

As indicated previously,[48] Ryans and his associates concluded that " . . . very high reliability appears to be unattainable even with a very large number of assessments."[49] There are several factors which serve to limit the reliability of assessments of teacher behavior. There is, first, the variance contributed by the observers, that is, systematic differences between observer sets and procedures despite extensive observer training. In addition, as Ryans observes, " . . . there also may be systematic variations in the teacher-class situation from one time to another which tend to reduce obtained inter-observer correlations. . . . For example, teacher-pupil relationships and resulting teacher behaviors may be quite different in an elementary school class during a period devoted to spelling from those in a social studies period where group participation may receive greater emphasis."[50]

---

[47] Ryans, *op. cit.*, p. 124.

[48] See "*Number and duration of observations*."

Thus, a proportion of the variance in observation data may be attributable to observer error and another proportion may be attributable to actual differences in the situation. It is the latter which ordinarily precludes very high reliability when using independent observations.[51]

Reliability of assessments in this study

Since the reliability of the combined assessments of two independent observers is greater than either assessment singly, it is appropriate to use as an index of reliability an estimate obtained by employing the Spearman-Brown formula. In the case of two observations the Spearman-Brown formula reduces to $r = \frac{2r_{12}}{1+r_{12}}$ where r_{12} is the correlation between the assessments of the two observers.[52]

---

[49] Ryans, *op. cit.*, p. 94.

[50] *Ibid.*, p. 116.

[51] Assuming that the former has been minimized.

[52] Ryans, *op. cit.*, p. 116.

Table 6.1 reveals the Spearman-Brown estimate[53] of the reliabilities of the composite assessments obtained in the classroom observation program of this study.

Table 6.1

Reliabilities of Classroom Observation Program Assessments of Teacher Behavior Patterns X, Y, and Z, Based on Correlation of Assessments of First Observer and Second Observer

Teachers Observed	Total Number of Observers Involved	Number of Teachers Observed*	Reliability Coefficients**		
			X	Y	Z
Elementary	2	68	.48	.48	.51
Secondary	2	13	.63	.76	.45

*Ford and regular combined. See footnote 12.
**Spearman-Brown estimate of the reliability of the composite assessment.

Comparison with reliabilities of assessments in TCS

Table 6.2 indicates the Spearman-Brown estimate[54] of the reliabilities of the composite assessments obtained in the Teacher Characteristics Study.[55]

---

[53] Based on the correlation between the assessments of the first observer and the second observer.

[54] Based on the correlation between the assessments of pairs of observers.

[55] Adapted from Table 15 in Ryans, op. cit., p. 118.

Table 6.2

Reliabilities of Teacher Characteristics Study Assessments of Teacher Behavior Patterns X, Y, and Z, Based on Correlation of Assessments of First Observer and Second Observer

Teachers Observed	Total Number of Observers Involved	Number of Teachers Observed	Reliability Coefficients*		
			X	Y	Z
Elementary Sample 1	5	150	.84	.82	.82
Elementary Sample 2	23	150	.62	.61	.66
Elementary Sample 3	23	150	.51	.39	.56
Secondary Sample 1	7	404	.81	.77	.77
Secondary Sample 2	17	1503	.69	.63	.69

*Spearman-Brown estimate of the reliability of the composite assessment.

It is possible to compare the reliability coefficients obtained in this study with those obtained in the Teacher Characteristics Study since the same instruments and procedures (including computational procedures) were employed in each instance.

It can be observed that the reliabilities of the assessments of teacher behavior patterns X and Z (elementary and secondary) in this study are slightly[56] below those reported in the Teacher Characteristics Study. The same is not true for teacher behavior pattern Y. In this instance the reliabilities in this study (elementary and secondary) fall within the range of those reported in the Teacher Characteristics Study.

There are at least three factors which might account for the fact that the reliability coefficients in this study (for teacher behavior patterns X and Z) are slightly below the range of those reported in the Teacher Characteristics Study. Two of the factors which might tend to reduce inter-observer correlation were discussed earlier:[57] (1) systematic differences between observer sets and procedures and (2) systematic variations in the classroom situation from one time to another. However, there is no reason to believe that these two factors were any more operative in this study than in the Teacher Characteristics Study.[58]

---

[56] Except for teacher behavior pattern Z (secondary) where the reliability coefficient obtained in this study is substantially below that obtained in the Teacher Characteristics Study.

There seems to be reason to believe that the third possible factor, the relative heterogeneity of the samples of teachers observed, may account, in part at least, for the lower inter-observer correlations (for teacher behavior patterns X and Z) obtained in this study. McNemar observes that the " . . . magnitude of the correlation coefficient varies with the degree of heterogeneity (with respect to the traits being correlated) of the sample. If we are drawing from a group which is restricted in range with regard to either or both variables, the correlation will be relatively low."[59]

It seems reasonable to assume that the teachers observed in this study represented a much less diverse (more homogeneous) sample than the teachers observed in the Teacher Characteristics Study. The teachers observed in this study were, for example, all graduates of the same institution, all in their first year of teaching, all from the same geographical area, all of approximately the same age, and all of the same sex. The teachers observed in the Teacher Characteristics Study, in contrast, were prepared in many institutions, had varying amounts of experience, came from different geographical areas, were diverse in age, and were of both sexes.

---

[57] See "Factors which limit reliability."

[58] See "Measures to minimize observer error."

[59] Quinn McNemar, Psychological Statistics, New York, John Wiley and Sons, 1962, p. 144.

If, indeed, the teachers observed in this study do represent a more homogeneous sample than the teachers observed in the Teacher Characteristics Study, lower inter-observer correlations would not be wholly unexpected.[60]

In summary, then, the reliabilities of the composite assessments obtained in this study are slightly below the range of those obtained in the Teacher Characteristics Study for teacher behavior patterns X and Z. In the case of teacher behavior pattern Y, however, the reliability coefficients in this study are within the range of those in the Teacher Characteristics Study. Although it is possible that the lower inter-observer correlations obtained for teacher behavior patterns X and Z are a consequence of systematic differences between observers and/or variation in the classroom situations observed, there is no particular reason to believe that these elements were any more operative in this study than in the Teacher Characteristics Study. It seems more likely that the lower inter-observer correlations on teacher behavior patterns X and Z obtained in this study are attributable to differences in the heterogeneity of the samples of teachers.[61] It appears that the teachers observed in the Teacher Characteristics Study represented a considerably more heterogeneous sample than did the teachers observed in this study.

---

[60] This statement assumes that the range of behavior on a teacher behavior dimension is likely to be more restricted if the sample of teachers observed is relatively homogeneous in terms of variables such as institution of preparation, experience, geographical location, age, sex, and the like, and less restricted if the sample is more heterogeneous in terms of these variables.

[61] See footnote 60.

The Teacher Behavior Patterns

Comparison of assessments

Table 6.3 indicates the mean assessments (scores) of each group[62] on each of the three teacher behavior patterns and the probability of the differences between the means for comparable groups.

Table 6.3

Mean Assessments of Six Groups of Teachers
on Three Teacher Behavior Patterns

Teacher Behavior Pattern	F11A	R11A	p	F11B	R11B	p	F11	R11	p
X	50.01	50.01		47.82	51.85	.50<.40	49.69	50.33	.80<.70
Y	51.71	48.20	.10<.05	50.09	49.91	>.90	51.47	48.50	.10<.05
Z	50.62	49.35	.60<.50	50.50	49.66	.90<.80	50.60	49.40	.60<.50

The mean assessments of the Ford teachers equal or exceed those of the regular teachers in every instance[63] except one.[64] However, none of the differences between the means are statistically significant.[65]

Teacher behavior patterns--elementary

There is no difference whatsoever between the mean assessments of the Ford and regular elementary teachers on teacher behavior pattern X. Similarly, there is no appreciable difference between the two groups on teacher behavior pattern Z.

---

[62] Data pertaining to the combined groups (F11 and R11) are also presented for the benefit of the reader who prefers to view each group (Ford and regular) as a whole. See footnote 11 in Chapter 2.

[63] That is, if the combined groups (F11 and R11) are disregarded. See footnote 62.

[64] Teacher behavior pattern X (secondary).

[65] That is, $p > .05$.

The most salient (but non-significant) difference between the Ford and regular elementary teachers is on teacher behavior pattern Y. The mean assessments suggest that the behavior of the Ford elementary teachers is closer to the "responsible, businesslike, systematic" pole of the teacher behavior pattern Y continuum while the behavior of the regular elementary teachers is closer to the "evading,unplanned, slipshod" pole.

It should not be inferred from the foregoing that the behavior of the Ford teachers is "responsible, businesslike, [and] systematic" and that of the regular elementary teachers is "evading, unplanned, [and] slipshod." Rather, the data suggest a difference between the two groups in relative position along the teacher behavior pattern Y continuum.[66] It may be appropriate at this juncture, too, to reiterate the position of Ryans that " . . . the position of a teacher near one of the poles of a teacher behavior pattern is intended to provide a factual description of certain aspects of that teacher's behavior and does not necessarily identify a teacher as 'effective' or 'ineffective.'"[67]

The haunting question, of course, is whether or not the (non-significant) difference between the mean assessments of the Ford and regular elementary teachers on teacher behavior pattern Y is, in fact, an indicator of a real difference which has been cloaked by systematic variance. Conversely, of course, the hint of a difference between the two groups of teachers may be merely a vagary in the data when, in fact, there is no difference.

---

[66] For example, the behavior of the Ford teachers may have been viewed as relatively more "responsible, businesslike, [and] systematic" than that of the regular teachers which was also "responsible, businesslike, [and] systematic." Conversely, the behavior of the regular teachers may have been viewed as relatively more "evading, unplanned, [and] slipshod" than that of the Ford teachers which was also "evading, unplanned, [and] slipshod."

[67] Ryans, op. cit., p. 126.

Teacher behavior patterns--secondary

The difference between the mean assessments of the Ford and regular secondary teachers on teacher behavior patterns Y and Z is not appreciable. The difference between the two groups on teacher behavior pattern X, however, is fairly substantial (though non-significant).

The mean assessments suggest that the behavior of the regular secondary teachers is closer to the "warm, understanding, friendly" pole of teacher behavior pattern X continuum while the behavior of the Ford secondary teachers is closer to the "aloof, egocentric, restrictive" pole.

Again, it should not be inferred from the foregoing that the behavior of the regular secondary teachers is "warm, understanding, [and] friendly" and that of the Ford secondary teachers is "aloof, egocentric, [and] restrictive." Rather, the data suggest a difference between the two groups in relative position along the teacher pattern X continuum.[68]

It will be indicated in the next chapter that there is some evidence (although not conclusive) that the regular secondary teachers have more "favorable opinions of pupils" and more "favorable opinions of democratic classroom procedures"[69] than their Ford counterparts. There is also some evidence (again not conclusive) that the "educational viewpoints) of the Ford secondary teachers are more "learning-centered ('traditional')" than those of their regular counterparts.[70]

---

[68] For example, the behavior of the regular teachers may have been viewed as relatively more "warm, understanding, [and] friendly" than that of the Ford teachers which was also "warm, understanding, [and] friendly." Conversely, the behavior of the Ford teachers may have been viewed as relatively more "aloof, egocentric, [and] restricitve" than that of the regular teachers which was also "aloof, egocentric, [and] restrictive."

[69] If the other pole of each continuum is employed, it can be said that the Ford secondary teachers have more "unfavorable opinions of pupils" and more "unfavorable opinions of democratic classroom procedures" than their regular counterparts.

It seems likely that the classroom behavior of the teacher who holds "educational viewpoints) which are more "learning-centered ('traditional')"[71] and who has less "favorable opinions of pupils" and less "favorable opinions of democratic classroom procedures" would be less "warm, understanding [and] friendly."[72] The Teacher Characteristics Study findings tend to corroborate this position. In the TCS it was noted that " . . . teachers who were high on Characteristic [teacher behavior pattern] X . . . expressed more favorable attitudes toward pupils and democratic classroom procedures . . ."[73] It was also observed that teacher behavior pattern X " . . . was positively, though slightly, correlated with the expression of more permissive, child-centered educational viewpoints . . ."[74]

Thus, while the data in Table 6.3 indicates that the difference between the mean assessments of the Ford and regular teachers on teacher behavior pattern X may well be attributable to chance, it does appear to be consistent with differences between the two groups in "educational viewpoints," "opinions of pupils," and "opinions of democratic classroom procedures."

---

[70] If the other pole of the continuum is employed, it can be said that the "educational viewpoints" of the regular secondary teachers are more "child-centered ('permissive')" than those of their Ford counterparts.

[71] As opposed to "child-centered ('permissive')" educational viewpoints.

[72] This sentence could be rephrased in a number of different ways depending on which poles of the continua are employed. See footnotes 69 and 70 as an example.

[73] Ryans, op. cit., p. 143.

[74] Ibid., p. 152.

Classroom Observations in Perspective

A classroom observation program was planned and implemented to gather data concerning the on-the-job performance of the Ford and regular graduates who were engaged in their first year of teaching in the public schools.

The Classroom Observation Record (COR) seemed to be the most appropriate observation instrument for this effort because it is based on a substantial amount of research, it yields descriptive data, it provides quantitative behavior descriptions, and it fosters an analytical view of teacher behavior.

The Classroom Observation Record provides for an assessment on each of 18 first-order teacher behavior dimensions and four first-order pupil behavior dimensions. The assessments on the first-order dimensions are combined in a prescribed manner to yield composite scores (assessments) on each of three teacher behavior patterns.

The two observers were trained in essentially the same manner as the observers who had participated in the Teacher Characteristics Study. Several measures were taken to minimize observer error attributable to possible observer bias and/or non-representative classroom behavior on the part of the teacher (and pupils).

The fact that the teachers observed in this study represented a more homogeneous sample than those observed in the Teacher Characteristics Study may account for the lower inter-observer correlations obtained in this study on teacher behavior patterns X and Z. The reliabilities of the composite assessments on teacher behavior pattern Y obtained in this study fall within the range of those obtained in the Teacher Characteristics Study.

The differences between the mean assessments of the Ford and regular teachers (elementary and secondary) on the three behavior patterns were non-significant.

The most striking (but non-significant) difference between the Ford and regular elementary teachers was on teacher behavior pattern Y. The behavior of the Ford teachers is closer to the "responsible, businesslike, systematic" pole of the continuum than that of the regular teachers.

The most pronounced (but non-significant) difference between the Ford and regular secondary teachers was on teacher behavior pattern X. The behavior of the regular teachers is closer to the "warm, understanding, friendly" pole of the continuum than that of the Ford teachers. This seems to be consistent with evidence (not conclusive) to be discussed in the next chapter which suggests that the regular teachers have more "favorable opinions of pupils," more "favorable opinions of democratic classroom procedures," and that their "educational viewpoints" are more "child-centered ('permissive')."

It is important, perhaps, to emphasize again that the available data fail to reveal statistically significant differences in the classroom behavior of the Ford and regular first-year teachers and that the foregoing discussion concerns salient but non-significant differences.

CHAPTER 7

TEACHER ATTITUDES, EDUCATIONAL VIEWPOINTS, VERBAL UNDERSTANDING, AND ADJUSTMENT

Introduction

Objectives

It was indicated in the preceding chapter that it was considered imperative that data concerning the classroom behavior of the "successful" graduates[1] of the Ford and regular programs be assembled. It seemed equally essential that data concerning the teachers'[2] attitudes or opinions,[3] and educational viewpoints ("educational philosophy") be accumulated. It seemed important, too, to acquire data concerning their emotional stability or adjustment (such as that yielded by certain personality inventories).[4]

It is not always possible to detect definitive relationships between attitudes or opinions and behavior. Nonetheless it seemed essential to consider attitudes and opinions in viewing the two groups (Ford and regular) of teachers. In the same vein, Ryans asserts that " . . . to anyone concerned with teaching, the desirability of attempting to understand motivational backgrounds as reveals in teachers' opinions about school-related matters is self-evident. While the extent of the relationship between verbally expressed attitudes, or opinions, and pupil-influencing teacher practices is generally unknown, the case for studying social attitudes has been ably argued . . . , and opinion measurement as a guide to the understanding and prediction of human behavior has been extensively employed."[5]

---

[1] That is, those "successful" graduates who had assumed positions in the public school system. See "Observation program" in the preceding chapter.

[2] See footnote 6 in the preceding chapter.

[3] Toward certain teaching-related or school-related stimuli.

[4] Although there are reported in this chapter data concerning the "verbal understanding" of the teachers, the original objectives did not include data on verbal ability since the Ohio State University Psychological Test data which was already available seemed to provide an adequate estimate of the verbal competence of the subjects.

The argument for seeking data concerning teachers' educational viewpoints ("educational philosophy") is somewhat analogous. As Ryans observes, " . . . a teacher may not actually conduct his classes in keeping with the viewpoints _he_ professes about educational matters. Nevertheless, one might expect a teacher committed to a particular set of educational viewpoints to behave differently in specified school situations from a teacher committed to some different educational viewpoint. Or, to put it briefly, it seems reasonable to assume that teacher behavior is influenced by the educational values held by the individual teachers."[6]

Preliminary effort

It is obviously more economical and efficient[7] to employ instruments[8] already developed if they are technically adequate and yield the data required.

The preliminary effort, then, entailed a review of existing instruments to determine their suitability for this study.[9]

---

[5] David G. Ryans, Characteristics of Teachers, Washington, American Council on Education, 1960, p. 139.

[6] Ibid., p. 148.

[7] In terms of both time and resources (fiscal and personnel).

[8] As will be indicated subsequently, the instrument finally selected was a single omnibus instrument which provides data comparable to those yielded by several separate instruments. The term "instruments" (plural) is employed in discussing the preliminary effort phase of the study since it was originally anticipated that it would be necessary to employ a number of separate instruments to acquire the desired data.

[9] In terms of certain criteria (see "Selection of the instrument").

In the event that the appropriate instruments had not been available, the only recourse would have been to attempt to develop them (although the available resources would have precluded extensive effort in instrument development). Fortunately, an omnibus instrument which fulfilled the requirements of this study was available and, consequently, effort in the area of instrument development was confined to (1) refining the instructions of that instrument and (2) formulating items designed to yield supplementary data peculiar to this study,[10] data required for subsequent related research,[11] and data for preliminary cross-cultural studies.[12]

Selection of the instrument

Since it was neither practical nor desirable to compel the teachers to participate in this study, the instrument (or instruments) finally selected (and/or developed) had to be not only to appropriate the objectives of the study and technically adequate but of a design which would encourage, or at least not discourage, voluntary participation on the part of the teachers.

---

[10] For example, biographical and descriptive (such as type of certificate held) data.

[11] For example, data concerning the teachers' opinions about various aspects of their preparation programs, their career objectives, job satisfaction, and the like.

[12] This study provided an excellent opportunity to secure data for preliminary studies for projected research on possible systematic relationships among the social-cultural-economic characteristics of pupils, the social-cultural-economic characteristics of teachers, and teacher attitudes, opinions, viewpoints, career motivation, job satisfaction, and the like.

It seemed that voluntary participation would be encouraged if the instruments selected were (1) of the pencil-and-paper type,[13] (2) amenable to self-administration,[14] (3) not unduly cumbersome or complex, (4) sufficiently brief,[15] (5) "interesting,"[16] and (6) easy to respond to.[17]

A review of the available instruments[18] designed to yield data on the various conative and cognitive characteristics of teacher narrowed to a single omnibus instrument, the Teacher Characteristics Schedule.[19] The TCS,[20] which was developed by Ryans and his associates in the course of the Teacher Characteristics Study,[21] seemed to be designed for an enterprise such as this study.

---

[13] To preclude need for special equipment and/or special conditions.

[14] To enable the subject to respond at a time and place most convenient to him.

[15] Brevity, of course, had to be assessed in terms of the "yield" of the instrument.

[16] There seems to be ample evidence that some instruments are seen by respondents as "more interesting" or "more fun" than others.

[17] An individual is usually more likely to participate if the response procedure is "easy," such as a "check" or the selection of an option as compared to, say, a narrative response which is "hard."

[18] In some instances the instrument was examined and descriptive and evaluative material concerning the instrument was reviewed; in other instances, it was necessary to rely solely on descriptive and evaluative material.

[19] The form of the TCS used in this study was not identical to any of the various forms used in the Teacher Characteristics Study. It was, rather, a form which had evolved from further refinement accomplished subsequent to the publication of _Characteristics of Teachers_ (_op. cit._).

[20] The abbreviation "TCS" can be confusing since at one time it may abbreviate Teacher Characteristics _Study_ and at another time it may abbreviate Teacher Characteristics _Schedule_. In this chapter "TCS" will always refer to the latter.

[21] See footnote 14 in the preceding chapter.

The Teacher Characteristics Schedule provides data concerning teachers' attitudes, educational viewpoints, verbal understanding, and emotional stability. (In addition, the TCS yields "validity of response" data and data designed to predict classroom behavior.[22]) Thus, from the standpoint of the objectives of this study, the TCS appeared to be the appropriate choice.

As to technical adequacy, the Teacher Characteristics Schedule is probably based on more extensive research than any other instrument of its type. Several pages hence, the procedures used in developing the instrument will be reviewed briefly.

The Teacher Characteristics Schedule conformed almost perfectly to the criteria which had been formulated in the interest of encouraging voluntary teacher participation. It is a pencil-and-paper instrument which requires no special equipment or conditions during administration. It is not only "amenable to self-administration" but specifically designed for self-administration.[23] Although the instructions might be viewed as complex by some respondents, the revised instructions prepared for use in this study were apparently simple and explicit. The TCS is brief (176 items) and entails (essentially) a multiple-choice (blacken-the-space) response procedure. Although the extent to which an instrument is "interesting" varies from respondent to respondent, the items seem to be ones which would "interest" most respondents.

All in all, then, the Teacher Characteristics Schedule seemed to be the most appropriate instrument for the purpose of this study. It yields data appropriate to the objectives of this study, it is technically adequate, and it meets the criteria which had been formulated in the interest of fostering voluntary teacher participation.[24]

---

[22] Since these data are not directly pertinent to the objectives of this study, they are not reported in this chapter. However, the data are reported in the appendix for the reader who wishes to examine them.

[23] For example, a number of disguised-structured items are employed. See "Attitude variables (R, R_1, and Q)."

Source of data

It will be recalled[25] that 89 "successful" graduates[26] of the Ford and regular programs[27] were known to have assumed positions in the Hawaii public school system during the first semester of the 1966-67 academic year. In the preceding chapter,[28] it was indicated that 81 of these teachers participated in the classroom observation program. The same 81 teachers were invited to respond to the Teacher Characteristic Schedule[29] and all agreed to do so.[30]

---

[24] The choice proved to be a sound one from this standpoint since every teacher invited to respond did so even though it involved about three hours of effort.

[25] See Chapter 1.

[26] See footnote 2 in Chapter 2.

[27] See footnote 8 in the preceding chapter.

[28] See "Source of data" in the preceding chapter.

[29] The instrument used in this study was actually the Teacher Characteristics Schedule supplemented with 54 additional items which were developed to attain certain secondary objectives (see "Preliminary effort" and footnotes 10, 11, and 12). However, the instrument will be referred to simply as the Teacher Characteristics Schedule. See footnote 31.

[30] All data reported in this chapter, then, are based on the following Ns:

F11A=35
F11B= 6
F11 =41

R11A=33
R11B= 7
R11 =40

Development of the Instrument[31]

Overview

As indicated earlier, the Teacher Characteristics Schedule was evolved in the course of an intensive study of the social and personal characteristics of teachers executed by Ryans and his associates. The development of the instrument is detailed in Characteristics of Teachers[32] and this discussion is limited to a brief overview.

The following excerpt from Contemporary Research on Teacher Effectiveness[33] provides overview of the manner in which Ryans and his associates proceeded in developing the Teacher Characteristics Schedule.

> . . . the [Teacher Characteristics] study attempted to develop questionnaires for tapping . . . teacher characteristics that could not be efficiently assessed by direct observation in the teacher's classroom. These were direct-inquiry, self-appraisal questionnaires developed to obtain estimates of:
>
> a. Teachers' attitudes (toward pupils, toward parents, toward colleagues, toward administrators);
>
> b. Teachers' educational viewpoints (academic-centered school programs versus school programs stressing other objectives, rigid school program versus flexible school program involving pupil and parent participation, teacher-directed learning in traditional subject-matter fields versus learning directed by pupil interests and abilities--these referring, in general, to what we sometimes call traditional versus permissive viewpoints);

---

[31] The data reported in this chapter are limited to those acquired from an analysis of the responses to the TCS items (see footnote 22) and not to the supplementary items (see footnote 29). Consequently, this discussion is confined to the development of the Teacher Characteristics Schedule and, more specifically, to those aspects of the development related to the six variables which have direct pertinence to the objectives of this study (see the last paragraph of this section and footnote 35).

[32] Ryans, Characteristics of Teachers, op. cit., p. 137-284.

[33] David G. Ryans, "Research on Teacher Behavior in the Context of the Teacher Characteristics Study," Bruce J. Biddle and William J. Ellena, eds., Contemporary Research on Teacher Effectiveness, New York, Holt, Rinehart and Winston, 1964, p. 67-101.

> c. The verbal intelligence or verbal understanding of teachers;
>
> d. The emotional adjustment of teachers.
>
> . . . [Next, effort was devoted to] the determination of correlates, or concomitants, of observed teacher classroom-behavior patterns. This activity involved:
>
> a. Developing paper-and-pencil instruments consisting of pools of items hypothesized to be related to teacher[s' attitudes, educational viewpoints, verbal understanding, and emotional adjustment.] . . .
>
> b. Deriving empirically validated scoring keys for such materials through a series of response analyses, employing the . . . direct-inquiry devices for criterion purposes. This identification of correlates . . . proceeded through a number of iterations. It culminated in a determination of the validity of the resultant "correlates keys" by means of cross-validation, concurrent validation, and presageful validation under different conditions.[34]

In brief, then, the procedure involved, first, the use of various direct-inquiry instruments to acquire data concerning certain teacher characteristics, i.e., attitudes, educational viewpoints, verbal understanding, and so forth. These data, in turn, provided the criteria by which pencil-and-paper items, hypothesized to be correlated with the various teacher characteristics, could be evaluated. The items which proved to be sufficiently correlated with the criteria data were incorporated into an omnibus instrument, the Teacher Characteristics Schedule. The objective, of course, was to develop a comprehensive instrument which would yield data concerning a number of teacher characteristics.

---

[34] Ibid., p. 69.

Although the Teacher Characteristics Schedule yields scores on ten variables, only six have direct pertinence to the objectives of this study:[35]

Teacher Characteristic R_{co}--favorable *vs*. unfavorable opinions of pupils.
Teacher Characteristic R_{1co}--favorable *vs*. unfavorable opinions of democratic classroom procedures.
Teacher Characteristic Q_{co}--favorable *vs*. unfavorable opinions of administrative and other school personnel.
Teacher Characteristic B_{co}--learning-centered ("traditional") *vs*. child-centered (permissive") educational viewpoints.
Teacher Characteristic I_{co}--superior verbal understanding (comprehension) *vs*. poor verbal understanding.
Teacher Characteristic S_{co}--emotional stability (adjustment) *vs*. instability.[36]

Use of correlates in the TCS

There are a number of difficulties inherent in most direct-inquiry instruments. A crucial one, of course, is that they tend to be susceptible to falsification by respondents who feel compelled to give "socially acceptable" answers and respondents who attempt to "fake" for one reason or another. Another difficulty resides in the fact that as the number of variables on which data are desired is increased direct-inquiry instruments become increasingly uneconomical.[37]

As a measure to circumvent such difficulties, the psychometricians developing the Teacher Characteristics Schedule sought " . . . an alternative approach to the estimation of . . . [teacher characteristics[38]]: that of attempting to identify . . . [them] indirectly from correlates,[39] or 'symptoms,' of those [characteristics] . . ."[40]

---

[35] See the first paragraph of "*Objectives*" and footnotes 4 and 22.

[36] Ryans, *Characteristics of Teachers*, *op. cit*., p. 388.

[37] In most direct-inquiry instruments the response to a single item ordinarily contributes to the data for a single variable and, consequently, the number of items required to yield adequate data on a large number of variables can make the instrument (or combination of instruments) lengthy and unwieldy.

Ryans observes that although the " . . . disadvantage of estimation from correlates lies in the fact that it is a step removed from direct estimation,"[41] the advantages are " . . . substantial. The employment of correlates . . . provides more economical measurement[42] in many instances than does direct measurement. It helps to avoid (but does not entirely escape) the distortion of measurement . . . which frequently occurs when 'tendency to give a socially acceptable response' is involved . . . [Moreover,] the use of correlates may permit the tapping of subtle aspects of a criterion behavior which ordinarily elude description and are not immediately apparent from direct estimates."[43]

The general procedure employed in identifying correlates entailed " . . . (a) the designation of criterion groups of individuals with regard to the [characteristic] . . . under study, (b) the hypothesizing of [items, the] . . . responses [to] which may predict the criterion behavior, and (c) the determination of those . . . responses which experience shows actually to distinguish between the criterion groups."[44]

---

[38] That is, attitudes, educational viewpoints, verbal understanding, and so forth.

[39] That is, items which correlate with criterion measures of the various teacher characteristics.

[40] Ryans, Characteristics of Teachers, op. cit., p. 162.

[41] Ibid., p. 163.

[42] The response to a single item may contribute to the data for several variables. See footnote 37.

[43] Ryans, Characteristics of Teachers, op. cit., p. 164.

[44] Loc. cit.

Attitude variables (R, R_1, and Q)

The procedure employed to obtain direct-inquiry data on teachers' attitudes is summarized in the following paragraph:

> A number of "opinionnaires" . . . related to teachers' attitudes toward groups of persons . . . in the school [was developed. The] . . . organization of teacher attitudes then was studied through factor analysis. Equipped with the results of the factor analyses, the [Teacher Characteristics] study centered its attention chiefly on the attitudes of teachers (1) toward pupils, (2) toward "democratic" classroom activities, and (3) toward administrators, fellow teachers, and nonadministrative personnel.[45] [46]

The psychometricians engaged in the Teacher Characteristic Study were concerned about the fact that " . . . true attitudes may be concealed . . . when attitude scales of the direct-question type are used in [certain] situations . . . "[47] and, consequently, " . . . studies were conducted to determine the extent to which disguised-structured items . . . might be used to estimate the same attitudes measured by the direct-question nondisguised opinion scales which had been developed."[48]

Finally, the correlates scoring keys for the attitude variables (R, R_1, and Q) were derived. The general procedure[49] involved " . . . (1) obtaining teachers' responses to direct-inquiry items . . . ; (2) arranging the resulting direct-inquiry scores in order of magnitude and . . . form[ing] criterion groups for the analysis; (3) determining, for each response to [each of] the items[,] . . . the correlation between acceptance of the response and membership in the high and low criterion groups; and (4) selecting those responses which met minimum . . . standards . . . for inclusion in the scoring key."[50]

---

[45] Variables R, R_1, and Q, respectively.

[46] Ryans, "Research on Teacher Behavior in the Context of the Teacher Characteristics Study," *op. cit.*, p. 78.

[47] Ryans, *Characteristics of Teachers*, *op. cit.*, p. 144.

[48] *Loc. cit.*

[49] The procedures followed in the derivation of the correlates scoring keys for the educational viewpoints variable (B), the verbal understanding variable (I), and the stability variable (S) were essentially the same as those employed in developing the correlates scoring keys for the attitude variables (R, R_1, and Q).

Educational viewpoints variable (B)

The manner in which direct-inquiry data were acquired and analyzed is outlined in the following paragraph:

> Teacher viewpoints with respect to curricular organization and scope, pupil participation and class planning, academic achievement standards, and so forth, . . . were investigated by means of direct inquiry and factor analysis of the intercorrelations among responses. . . . [Although the] factorial representation of educational viewpoints that emerged was not clear-cut [,] . . . there seemed to be justification for considering teachers' educational beliefs from the standpoint of a single continuum . . . "[51]

The abbreviated description of variable B, "learning-centered ('traditional') vs. child-centered ('permissive') educational viewpoints," is, perhaps, oversimplified. "The teacher whose viewpoints lie at one end of this continuum appears to believe in strong emphasis upon academic subject matter and academic achievement and in the teacher's responsibility for determining what shall be learned and how it shall be learned. At the other end of the continuum is the teacher who appears to believe that other educational objectives are equally or more important than those of an academic nature, that pupils and parents should participate actively in planning and conducting the class and school program, and that subject matters should be integrated among themselves and also with out-of-school activities."[52]

---

[50] Ryans, Characteristics of Teachers, op. cit., p. 207-208.

[51] Ryans, "Research on Teacher Behavior in the Context of the Teacher Characteristics Study," op. cit., p. 78.

[52] Ryans, Characteristics of Teachers, op. cit., p. 151-152.

The correlates scoring keys for the educational viewpoints variable (B) were derived in essentially the same manner as those for the attitude variables.[53]

There appears to be a rather close relationship among the attitude and educational viewpoints variables (R, R_1, Q, and B). Ryans observes, however, that although they " . . . have a considerable amount of variance in common . . . , some notable differences in their manifestation by different groups of teachers frequently were found."[54]

Verbal understanding and adjustment variables (I and S)

> In order to obtain estimates of the verbal understanding of teachers, vocabulary and verbal analogy items were constructed, experimentally administered, and the responses analyzed. The procedure produced a small number of carefully selected items comprising a "verbal ability" scale . . .
>
> In a similar way, questionnaires were prepared . . . [and] analyzed to obtain items for use in estimating the emotional stability of teachers.[55]

The correlates scoring keys for the verbal understanding and emotional stability variables (I and S) were derived in essentially the same manner as those for the attitude variables.[56]

Susceptability of TCS to "faking"

Ryans and his associates engaged in a number of studies designed to assess the extent to which the Teacher Characteristics Schedule was susceptable to falsification ("faking"). It was concluded that " . . . although the scores . . . are not immune to the effects of response sets toward falsification or giving socially acceptable responses, so long as the respondent is not given specific direction but is left to his own orientation, the effects will not be marked."[57]

---

[53] See the last paragraph of "Attitude variables (R, R_1, and Q)."

[54] Ryans, Characteristics of Teachers, op. cit., p. 210-211.

[55] Ryans, "Research on Teacher Behavior in the Context of the Teacher Characteristics Study," op. cit., p. 78-79.

[56] See the last paragraph of "Attitude variables (R, R_1, and Q)."

Administration and Scoring

Administration

As indicated previously, the instructions for the Teacher Characteristics Schedule were refined in an effort to make them as simple and unequivocal as possible. In addition, supplementary explanations and instructions especially directed to the respondents in this study were prepared. Consequently, the administration of the TCS proceeded without difficulty.

Scoring

It was necessary to employ two scoring keys for each variable,[58] one indicating the positively correlated responses and one indicating the negatively correlated responses. The positive correlates (plus) score on a variable was determined by counting the number of positively correlated responses marked by the respondent. Similarly, the negative correlates (minus) score on the same variable was determined by counting the number of negatively correlated responses marked by the respondent.

The total score of the respondent on a particular variable was determined by adding the positive correlates score and the negative correlates score. A constant of 40 was added to avoid total scores which were negative.[59]

---

[57] Ryans, Characteristics of Teachers, op. cit., p. 268.

[58] Thus, a total of 20 scoring keys were required to score all 10 variables (see, however, the last paragraph of "Overview" and footnote 22).

[59] The actual computation procedure was to: (1) add the constant of 40 and the positive correlates score and (2) substract the negative correlates score.

Although " . . . the 'plus scores' (positively correlated responses) and 'minus scores' (negatively correlated responses) for a characteristic [variable] may be used more or less interchangeably [,] . . . for comparisons of teacher groups and various other researches conducted by the [Teacher Characteristics] Study, a total score based on both positively and negatively correlated responses was employed."[60] Similarly, a total score based on both the "plus scores" and the "minus scores" was used in this study.

Teacher Attitudes and Educational Viewpoints

Comparison of scores

Table 7.1 indicates the mean scores of each group[61] on each of four Teacher Characteristics Schedule variables concerning teacher attitudes (R, R_1, and Q) and educational viewpoints (B). The table also indicates probability of the differences between the means for comparable groups.

---

[60] Ryans, Characteristics of Teachers, op. cit., p. 229.

[61] Data pertaining to the combined groups (F11 and R11) are also presented for the benefit of the reader who prefers to view each group (Ford and regular) as a whole. See footnote 11 in Chapter 2.

Table 7.1

Mean Scores of Six Groups of Teachers on Four Teacher Characteristics Schedule Variables*

TCS Variable	F11A	R11A	p	F11B	R11B	p	F11	R11	p
R	44.34	44.82	.80<.70	38.83	43.86	.10<.05	43.54	44.65	.40<.30
R_1	43.17	43.64	.40<.30	40.67	42.57	.10<.05	42.80	43.45	.20<.10
Q	38.89	41.82	.02<.01	36.33	38.00	.50<.40	38.51	41.15	.02<.01
B	40.40	40.03	.70<.60	42.83	39.14	.10<.05	40.76	39.88	.40<.30

*"Opinions of pupils" (R), "opinions of democratic classroom procedures" (R_1), "opinions of administrative and other school personnel" (Q), and "educational viewpoints" (B).

The mean scores of the regular teachers on the attitude variables (R, R_1, and Q) exceed those of the Ford teachers in every instance. However, the differences between the means are statistically significant[62] in only one instance.[63]

Although the mean scores of the Ford teachers are higher than those of the regular teachers on the educational viewpoints variable (B), the difference between the means is not statistically significant.

Attitudes and viewpoints--elementary

Although there is virtually no difference between the Ford and regular elementary teachers on the "opinions of pupils" and the "opinions of democratic classroom procedures" variables (R and R_1, respectively), there is a marked (significant) difference between the two groups on the third attitude variable (Q). The position of the Ford elementary teachers on the "opinions of administrative and other school personnel" continuum (variable Q) is closer to the "unfavorable" pole while that of the regular teachers is closer to the "favorable" pole.

---

[62] That is, $p < .05$.

[63] Variable Q (elementary).

It should not be inferred from the foregoing that the Ford elementary teachers have "unfavorable opinions of administrative and other school personnel" in contrast to the regular teachers who have "favorable . . . opinions of administrative and other school personnel." Rather, the data indicate a (statistically significant) difference between the two groups in relative position along the variable Q continuum.[64]

Although the difference between the Ford and regular elementary teachers on the "opinions of administrative and other school personnel" variable appears to be real, it is impossible to account for it in terms of specific differences in their pre-service education programs without resorting to sheer speculation.

Attitudes and viewpoints--secondary

It can be seen in Table 7.1 that the difference between the mean scores of the Ford and regular secondary teachers on the "opinions of administrative and other school personnel" variable (Q) was minimal (and non-significant). The difference between the two groups on the other three variables (R, R_1, and B) is fairly substantial (though non-significant).

The mean scores suggest that the regular secondary teachers have more "favorable . . . opinions of pupils," and more "favorable . . . opinions of democratic classroom procedures," and more "child-centered ('permissive') educational viewpoints."[65] Again, it should not be inferred from the foregoing that the Ford teachers have, for example, "unfavorable opinions of pupils" in contrast to the regular teachers who have "favorable . . . opinions of pupils." Rather, the data suggest a difference between the two groups in relative position along the variable R continuum.[66]

---

[64] For example, the regular teachers may have relatively more "favorable . . . opinions of administrative and other school personnel" than the Ford teachers who also have "favorable . . . opinions of administrative and other school personnel." Conversely, the Ford teachers may have relatively more "unfavorable opinions of administrative and other school personnel" than the regular teachers who also have "unfavorable opinions of administrative and other school personnel."

It was indicated in the preceding chapter[67] that the substantial (but non-significant) difference between the mean assessments of the Ford and regular secondary teachers on teacher behavior pattern X suggests that the behavior of the regular teachers is closer to the "warm, understanding, friendly" pole while the behavior of the Ford teachers is closer to the "aloof, egocentric, restrictive" pole. It was indicated, too, that the Teacher Characteristics Study findings tend to corroborate the view that the classroom behavior of the teacher who holds educational viewpoints (B) which are more "learning-centered ('traditional')" and who has less "favorable . . . opinions of pupils" (R) and less 'favorable . . . opinions of democratic classroom procedures" (R_1) would tend to be less "warm, understanding, [and] friendly" (teacher behavior pattern X).[68]

---

[65] This sentence could be phrased in a number of different ways depending on which poles of the continua are employed. See footnotes 69 and 70 in the preceding chapter as an example.

[66] See footnote 64.

[67] See "Teacher behavior patterns--secondary" in the preceding chapter.

[68] See footnote 65.

Thus, the substantial (but non-significant) differences between the mean scores of the Ford and regular secondary teachers on variables R, R_1, and B seem to be consistent with the difference between the two groups on teacher behavior pattern X.[69]

Professional/general education and educational viewpoints

It is sometimes asserted that professional education fosters "child-centered ('permissive') educational viewpoints" and that general education fosters "learning-centered ('traditional') . . . educational viewpoints."

It was reported earlier that the regular students (elementary and secondary) completed more semester hours of professional education, on the average, than did their Ford counterparts. It was reported, too, that the difference[70] between the Ford and regular elementary students was considerably greater than the difference between the Ford and regular secondary students.[71]

If professional education indeed fosters "child-centered ('permissive') educational viewpoints" and general education fosters "learning-centered ('traditional') educational viewpoints," the following expectations concerning the teachers' mean scores on educational viewpoints variable (B) seem appropriate:

(1) the mean score of the Ford elementary teachers should be higher than that of the regular elementary teachers.

(2) the mean score of the Ford secondary teachers should be higher than that of the regular secondary teachers.

---

[69] "Warm, understanding, friendly vs. aloof, egocentric, restricted teacher behavior."

[70] In average number of semester hours of professional education completed.

[71] See "Professional Education--Total Program" in Chapter 2.

(3) the difference between the mean scores of the Ford and regular elementary teachers should be larger than the difference between the mean scores of the Ford and regular secondary teachers.

The data pertaining to the educational viewpoints variable (B) reveal that:

(1) the mean score of the Ford elementary teachers is slightly (but not significantly) higher than that of the regular elementary teachers.

(2) the mean score of the Ford secondary teachers is substantially (but not significantly) higher than that of the regular secondary teachers.

(3) the difference between the mean scores of the Ford and regular elementary teachers[72] is substantially[73] smaller than the difference between the mean scores of the Ford and regular secondary teachers.[74]

These data suggest that, in this instance at least, the extent to which professional education fosters "child-centered ('permissive') educational viewpoints" and, conversely, the extent to which general education fosters "learning-centered ('traditional') educational viewpoints" is moderate at best.

Elementary/secondary comparisons

The mean scores on the attitude variables (R, R_1, and Q) suggest that the elementary teachers (Ford and regular) have more "favorable . . . opinions of pupils," more "favorable . . . opinions of democratic classroom procedures," and more "favorable . . . opinions of administrative and other school personnel" than the secondary teachers (Ford and regular).[75]

---

[72] .37.

[73] The probability of the difference between the difference between the mean scores of the Ford and regular elementary teachers and the difference between the mean scores of the Ford and regular secondary teachers was not computed.

[74] 3.69.

[75] See footnote 65.

Ryans and his associates found that "elementary teachers . . . generally showed more favorable attitudes than did secondary teachers, the difference being significant[76] for all three factors[77] . . ."[78] Thus the findings of this study with respect to elementary/secondary comparisons on the attitude variables (R, R_1, and Q) appear to be consistent with those of the Teacher Characteristics Study.

Turning to the educational viewpoints variable (B), Ryans reports that in the Teacher Characteristics Study "secondary teachers as a group tended to express educational viewpoints more toward the traditional, academic end of the B scale and the elementary teachers more toward the child-centered, permissive pole."[79] The Teacher Characteristics Study findings, then, would prompt the expectation that the position of the secondary teachers (Ford and regular) on the educational viewpoints (B) continuum would be closer to the "learning-centered ('traditional') pole while that of the elementary teachers would be closer to the "child-centered ('permissive')" pole. The data in Table 7.1 indicate that this is indeed true in the case of the Ford secondary teachers. However, the position of the regular secondary teachers--closer to the "child-centered ('permissive') pole than the (Ford and regular) elementary teachers--is unexpected.

An interesting distinction between the elementary and secondary teachers is that the variables (R, R_1, and B) on which the differences between the mean scores of the

---

[76] The probability of the difference between the mean scores of the elementary teachers and the mean scores of the secondary teachers was not computed.

[77] The three factors (R, A, and N) were subsequently designated R, R_1, and Q (but not respectively) (See Ryans, Characteristics of Teachers, op. cit., p. 142-143).

[78] Ibid., p. 143.

[79] Ibid., p. 152.

Ryans and his associates found that " e lementary teachers . . . generally showed more favorable attitudes than did secondary teachers, the difference being significant[76] for all three factors[77] . . . ."[78] Thus the findings of this study with respect to elementary/secondary comparisons on the attitude variables (R, R_1, and Q) appear to be consistent with those of the Teacher Characteristics Study.

Turning to the educational viewpoints variable (B), Ryans reports that in the Teacher Characteristics Study "[s]econdary teachers as a troup tended to express educational viewpoints more toward the traditional, academic end of the [B] scale and the elementary teachers more toward the child-centered, permissive pole."[79] The Teacher Characteristics Study findings, then, would prompt the expectation that the position of the secondary teachers (Ford and regular) on the educational viewpoints (B) continuum would be closer to the "child-centered ('permissive')" pole. The data in Table 7.1 indicate that this is indeed true in the case of the Ford secondary teachers. However, the position of the regular secondary teachers--closer to the "child-centered ('permissive') pole than the (Ford and regular) elementary teachers--is unexpected.

An interesting distinction between the elementary and secondary teachers is that the variables (R, R_1, and B) on which the differences between the mean scores of the secondary teachers are substantial (but non-significant) are the variables on which the differences between the mean scores of the elementary teachers is nominal. Conversely, the single variable (Q) on which the difference between the mean scores of the elementary teachers is substantial (and significant) is the variable on which the difference between the mean scores of the secondary teachers is relatively small.

---

[76] The probability of the difference between the mean scores of the elementary teachers and the mean scores of the secondary teachers was not computed.

[77] The three factors (R, A, and N) were subsequently designated R, R_1, and Q (but not respectively) (See Ryans, Characteristics of Teachers, op. cit., p. 142-143).

[78] Ibid., p. 143.

[79] Ibid., p. 152.

Teacher Verbal Understanding and Adjustment

Comparison of scores

Table 7.2 indicates the mean scores of each group[80] on the Teacher Characteristics Schedule variables concerning teacher adjustment (S) and verbal understanding (I). The table also indicates the probability of the differences between the means for comparable groups.

Table 7.2

Mean Scores of Six Groups of Teachers on
Two Teacher Characteristics Schedule Variables*

TCS Variable	F11A	R11A	p	F11B	R11B	p	F11	R11	p
S	44.09	44.18	>.90	44.17	46.71	.30<.20	44.10	44.63	.60<.50
I	55.63	55.30	.80<.70	57.00	57.00		55.83	55.60	.90<.80

*"Verbal understanding" (I) and "emotional stability (adjustment)" (S).

A review of the data in Table 7.2 indicates that the differences between the mean scores of the Ford and regular elementary teachers on both variables (S and I) are negligible. There is no difference whatsoever between the Ford and regular secondary teachers on the verbal understanding variable (I) and the difference between the two groups on the stability variable (S) is relatively small and non-significant.[81]

---

[80] See footnote 61.

Attitudes, Viewpoints, Understanding, and Adjustment in Perspective

The goal of this phase of the study was to assemble data concerning the teachers' attitudes (opinions), educational viewpoints, emotional stability (adjustment), and (subsequently) verbal understanding.

The instrument had to be not only appropriate to the objectives and technically adequate but of a design which would encourage voluntary participation on the part of the teachers (respondents).

The Teacher Characteristics Schedule proved to be well suited to the task. It is the product of extensive research which entailed the use of various direct-inquiry instruments to acquire data concerning certain teacher characteristics, i.e., attitudes, educational viewpoints, verbal understanding, and so forth. These data provided the criteria by which pencil-and-paper items, hypothesized to be correlated with the various teacher characteristics, could be evaluated. The items which proved to be sufficiently correlated with the criterion data were incorporated into an omnibus instrument.

The Teacher Characteristics Study yields scores on ten variables, six of which seemed pertinent to this study. The three attitude variables are the "opinions of pupils" variable (R), the "opinions of democratic classroom procedures" variable (R_1), and the "opinions of administrative and other school personnel" variable (Q). The other three are the educational viewpoints variable (B), the verbal understanding variable (I), and the adjustment variable (S).

---

[81] That is, $p > .05$.

The instrument (supplemented with 54 additional items developed to attain certain secondary objectives) was administered to 81 (Ford and regular) teachers.

There was a substantial (and significant) difference between the Ford and regular elementary teachers on the "opinions of administrative and other school personnel" variable (Q)--the regular teachers appeared to have more "favorable . . . opinions of administrative and other school personnel" than the Ford teachers. The differences between the Ford and regular elementary teachers on the other two attitude variables (R and R_1) and the educational viewpoints variable (B) were nominal and non-significant.

There were substantial (but non-significant) differences between the Ford and regular secondary teachers on three variables (R, R_1, and B). The seemingly more "favorable . . . opinions of pupils," more "favorable . . . opinions of democratic classroom procedures," and more "child-centered ('permissive') educational viewpoints" of the regular teachers appeared to be consistent with their proximity to the "warm, understanding, friendly" pole of teacher behavior pattern X as reported in the preceding chapter. The difference between the Ford and regular secondary teachers on the "opinions of administrative and other school personnel" variable (Q) was small and non-significant.

The educational viewpoints data, examined in the context of the undergraduate programs of the teachers, suggest that the extent to which professional education seems to foster "child-centered ('permissive') educational viewpoints," and the extent to which general education seems to foster "learning-centered ('traditional') educational viewpoints" is moderate at best.

The elementary teachers (Ford and regular) appeared to have more "favorable . . . opinions of pupils," more "favorable . . . opinions of democratic classroom procedures," and more "favorable . . . opinions of administrative and other school personnel" than the secondary teachers (Ford and regular). The same thing was found to be true in the Teacher Characteristic Study.

The relative position of the Ford secondary teachers on the educational viewpoints continuum--closer to the "learning-centered ('traditional')" pole than the (Ford and regular) elementary teachers--was consistent with the findings of the Teacher Characteristic Study that secondary teachers tend to express more "learning-centered ('traditional') educational viewpoints" than elementary teachers. However, the position of the regular secondary teachers on the educational viewpoints continuum--closer to the "child-centered ('permissive') pole than the (Ford and regular) elementary teachers--seemed to be an anomaly.

It was observed, too, that the variable on which the (Ford and regular) elementary teachers differed significantly (Q) was the variable on which the Ford and regular) secondary teachers failed to differ. Conversely, the variables on which the secondary teachers differed substantially (R, R_1, and B)--but not significantly--were the variables on which the elementary teachers failed to differ.

Finally, it was indicated that the differences between the Ford and regular teachers (elementary and secondary) on the adjustment and verbal understanding variables (S and I) were non-significant.

Procedures employed in the Computation of Chi Square

The procedures employed in the computation of chi square are essentially those suggested in Nonparametric Statistics for the Behavioral Sciences.[1]

If df>1, the standard chi square formula was used--but only if (a) fewer than 20 per cent of the cells had an expected frequency of less than 5 and (b) no cell had an expected frequency of less than 1. If the data in the original categories[2] were such that the requirements of (a) and/or (b) could not be met, the categories were modified by combining adjacent categories--but only to the extent necessary to comply with (a) and (b). The standard chi square formula was then applied to the modified categories (if df was still>1).

If df=1 (original or modified categories), a chi square formula incorporating a correction for continuity was employed (N>40 in every instance).

---

[1] Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences, New York, McGraw-Hill, 1956, p. 110.

[2] See "Comparison of the two groups" in Chapter 1.

Mean Scores of Six Groups of Teachers on
Four Teacher Characteristics Schedule Variables*

TCS Variable	F11A	R11A	p	F11B	R11B	p	F11	R11	p
V	48.09	49.09	.30<.20	47.17	49.86	.30<.20	47.95	49.23	.10<.05
X	47.17	46.91	.90<.80	43.83	44.71	.70<.60	46.68	46.53	.90<.80
Y	43.49	42.48	.20<.10	43.50	44.00	.80<.70	43.49	42.75	.40<.30
Z	47.23	46.09	.20<.10	44.67	45.71	.60<.50	46.85	46.03	.30<.20

*"Validity of response" (V), "warm, understanding, friendly _vs_. aloof, egocentric, restricted classroom behavior" (X), "responsible, businesslike, systematic _vs_. evading, unplanned, slipshod classroom behavior" (Y), and "stimulating, imaginative _vs_. dull, routine classroom behavior" (Z).

The data in the table above were not reported in the text of this report since they were considered not directly pertinent to the objectives of this study.[1]

The "validity of response" scale (V) was developed " . . . to estimate the extent to which a respondent was tending to give 'valid,' or accurate, self-assessments as contrasted with 'socially acceptable' responses."[2]

The X, Y, and Z variables are predictor variables in the sense that scores attained on these scales are intended to predict the classroom behavior[3] of the respondents.[4]

---

[1] See the last paragraph of "_Overview_" and footnote 22 in Chapter 7.

[2] David G. Ryans, "Research on Teacher Behavior in the Context of the Teacher Characteristics Study," Bruce J. Biddle and William J. Ellena, eds., _Contemporary Research on Teacher Effectiveness_, New York, Holt, Rinehart and Winston, 1964, p. 69. The limitations of the scale are discussed in David G. Ryans, _Characteristics of Teachers_, Washington, American Council on Education, 1960, p. 226.

[3] In terms of teacher behavior patterns X, Y, and Z (see "The Observation Instrument" in Chapter 6).

[4] The reader desiring further detail should refer to _Characteristics of Teachers_, _op. cit_.